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176-7816-1	N BNSF #[illegible] Tiger Stripes DCC Ready #[illegible]	$[illegible]
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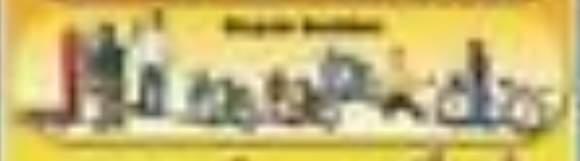

WOODLAND SCENICS

RAIL MODEL JOURNAL

How YOU can do it BETTER

March 1990 Volume 1, Number 10

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EDITOR'S DESK

Postwar perfection!

REBUILDING LIONEL NO. 022 SWITCHES AND MORE

When I started back into model railroading, one of my goals was to model my childhood layout as it looked in the 1950s. One project I addressed was replacing my O gauge tubular track and O-27 switches with tinplate scale-width track and O-gauge switches. Nothing wrong with that!

For shame! O gauge's tubular track is the closest fit a non-train person (I kinda-sorta-kid-at-heart-ish) will ever get to a real railroad. Realistic much, or prototypical (and practical). Thanks to decades of more precise-but-need-track-is-widely-available-and-reasonably-priced.

If you're an O gauger—and you've been a while, you're probably much a boomer or two—this tubular track. But even superior can have some styles on page 46, you'll find Lionel Fastrack from Kalmbach's favorite tips for working with classic three-rail track. From track plan

ning to common cranking track and making insulated track sections, you'll find it here.

Over 2,140 layout plan features a pair of Lionel no. 022 remote-control switches. Talk about no-brainer... the 022 was introduced in 1938 and has been made with only the smallest era. It's still the most recognizable switch around!

The reasons for the enduring popularity of these switches are no secret. They look great, are reliable, sturdy, and have proven to be remarkably reliable. No wonder those in Lionel built the 022 right.

Every so often a new iteration of one these switches can get a little tired. Fortunately, 2016 saw reasonable ways to keep up and remaining their great looks and snappy, like new operation a very satisfying.

We thought an article on making Lionel's 022—would be interesting and helpful. Publisher Kim's Newsstand knows how one person does switches, and he couldn't agree to write a step by step article on

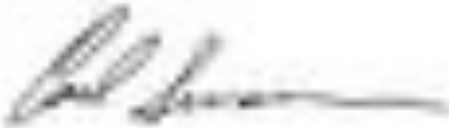
retrofitting them to good condition. I set off to find a suitably skilled 022. (A short story would perform his magic.)

My local hobby store was happy to share his a weathered pair of 022s, like new, with original boxes, and priced to move.

"Hmm mmm," I agreed. "But I was really hoping that you had something in much more a condition."

After a search, the store located the best of which I needed a guarantee more as shown in the above photo of the controller.

Not above everything that could be wrong with a switch that wrong with this one. And not one never. On page 54, read about how Kim's restoration was switch to useful service, and how you can, too.



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General Electric Evolution Series diesel locomotives, like B. Mathers Co. has added these models road units to its Milestone series. The models are decorated for CSX (#3400), Canadian Pacific (#3400), Canadian National (#3400), BNSF Railway, Norfolk Southern (#3400), and Union Pacific (#3400). The HO models are offered in four road numbers per scheme that seem to attract custom [illegible] and with a dual-mode SoundTraxx sound decoder [illegible] and feature working front and rear ditch lights. Mfrs. B. Mathers Co., 918-627-9730, www.mathers.com

HO scale locomotives

► General Electric Dash 9 and AC diesel locomotives. $[illegible] Rr. road and other southwestern Canadian National, Chicago, Burlington & Quincy, & Union Pacific and gray. Accessory scheme: Chicago & North Western, Great Northern, Interpool, Omaha, Chicago and Baltimore, Union, Kansas, Kansas, Kansas, Norfolk Southern, Spokane, Portland & Seattle, Soldier, and green. Kansas, Kansas, and Union Pacific (#3400 pictured). Three numbers per scheme. Prototype-specific track refinements, dummy couplers and painted wire grab irons and roller and nine pin connectors for digital [illegible] Locomotive Control decoder. $[illegible] December 2018. Available from dealers. Mfr. P.M. Arts. www.atlasrr.com

► Electro-Motive Division (EMD) SD70ACe diesel locomotive. Nine paint schemes: CSX, CANTEX, ELECTX Locomotive Freight, Kansas City Southern, Union Pacific, Norfolk Southern, Morristown & Erie, Reading & Northern, and Union Pacific. Nine numbers per scheme. Many numbers per scheme, some undecorated and all-black versions also available. Prototype-specific details, painted cow figures, and Accusound couplers. Stock number model, $[illegible] with DCC Locomotive Control decoder. $[illegible] December 2018. Available from dealers. Mfr. P.M. Arts. www.atlasrr.com

Code 83 curved turnouts. These new Custom Line Track 'n' series turnouts are available from Atlas Model Railroad Co. The HO scale curved turnouts [illegible] early runs in left- and right-hand versions and feature brown plastic ties, nickel silver rail and die-cast metal points. Frog with a powder contact and guardrails. The outer radius is 30", and the inner radius is 22". Atlas Model Railroad Co., 908-687-9888, www.atlasrr.com

HO scale freight cars

► Wagonette freight car kits. Four Low 40-foot single-sheathed Dreadful Series kits [illegible] Rr. 0 cascade Colors with post 1900 herald). Approximate [illegible] Prototype-model-year-specific short Gay's Union Pacific combine [illegible] $[illegible] Architecture. Standard [illegible] 40-foot double-sheathed boxcar with straight sheathing freight car [illegible] Store ready. [illegible] Chesapeake Packing. 86-foot plug door steel refrigerator car. $[illegible] Lehigh & New England. 40-foot plastic-sheathed boxcar with wood ends and fully weathered. [illegible] Wisconsin Pacific Railroad. Standard [illegible] cabin. Kits supplies Store-bay concrete supplies. [illegible] Wisconsin & Southern. 40-foot double-plug door box car. [illegible] Tabs-and-slotted plastic kits with glues, adhesives and [illegible] complete. Accessories [illegible] www.wagonetteco.com

► Gunderson 60-foot double-door boxcar. $[illegible] Undecorated Trinity Industries ("red corolla" boxcar and more are Canadian Pacific Rr.

MORE UPDATES

Scan this code to access Model Railroader's weekly Kick It Online! feature that just keeps rolling.

rivet-and-bracket). Assembly/decoration instructions (Mexican Railway weathered). Nine (1 control shrouded) w/brass1 coil Kadee® 148 truck numbers per wheelset. Wire grab irons, etched metal centered plate ladder, pre-built separate Miner® brake couplers. $79.98. Available 2018. Ready-to-Roll. Athearn Trains. 800-458-4579. www.athearn.com

• North American Car Co. 8,000-gallon tank car. Acquire, Nacional Mex #, # (Chemical, black), Trans Tank Car Co. (black and brown), and Vulcan Materials Co. Nine road numbers per release. Photo-etched metal platforms, separately applied ladders with bracing, and body-mounted Ajax® brake's double-shell couplers. $79.98. Available 2018. Ready-to-Roll. Athearn Trains. 800-458-4579. www.athearn.com

• Pacific Car & Foundry 57-foot mechanical refrigerator car. Atlantic & ("Ice Blocks") Missouri Pacific Heavy Iron, Burlington Northern Refrigerator Express ("Reefer Mail"), Golden West Service, Great Northern Western Pacific & Wisconsin Central (weathered), and Union Pacific. Nine road numbers per release. Body-mounted Ajax® brake's with coupler's. $37.95. Available 2018. Ready-to-Roll. Athearn Trains. 800-458-4579. www.athearn.com

• All-X cabooses. Nine paint schemes: Chicago, Rock Island & Southern cars road numbers and lettered's cars Lake Superior Coast Line (Soo Line), Nine cars Nine's Kansas Minneapolis. Nine "bell," Nine Pacific & Northern Norfolk & Western, and Nine's Central. Ten cars Ajax® brake's per scheme (where noted) also available unlettered. Pilot, body, and Ajax® brake's Ajax® brake's. Nine Nine's

& Standard and Radial Plate Road numbers). Brake line detail, solid- or cable-hanging ladder w/ appropriate, and Accurate couplers. $29.95 (radio-cars) $32.95). Model Line. Atlas Model Railroad Co., 978-387-4000. www.atlas-rr.com

• 40-foot gasoline tanker with 6-foot doors. Nichols, Sigma & Santa Fe ("The Grand Canyon Line" and "Ship and Travel Santa Fe All the Way" designs), Mobile & Ohio (only Indiana Harbor Belt ("Connects with 20 Chicago Railroads" (small)), Montana Rail Link (not car has road numbers), Seattle Northern (pre-1982 wingspan), and Pittsburgh & Lake Erie ("Serves the Steel Centers" slogan). Prototype specific end, seals and doors, detailed under-frame, and Machined metal wheels. Three numbers per scheme (some cars) also available unlettered. $31.95 (unlettered), $37.95). Master Line. Atlas Model Railroad Co., 978-387-4000. www.atlas-rr.com

• Pennsylvania 89 class X30 50-foot automobile boxcar. Cast-resin 44-ton nine-two-piece body, wood running boards, and decals. Front and rear end, seals and doors, detailed under-frame, and Machined metal wheels. Three numbers per scheme (some cars) also available unlettered. $31.95 (unlettered), $37.95). Master Line. Atlas Model Railroad Co., 978-387-4000. www.atlas-rr.com

NEW. • 40-foot steel-side capacity Wine-help stenciled hopper. Four Valley Models offers the car decorated for Chicago & North Western, WGEF #s. (post-1955 herald) and Cotswold dealer with circle-cross herald in three road numbers; buffer varies in four versions, two to three numbers each). The N scale covered hopper $34.95 has etched metal running boards, body-mounted couplers, and metal wheelsets. Fox Valley Models. www.foxvalleymodels.com.

[illegible]

[illegible]

[illegible]

[illegible]

HO scale structures

[illegible]

[illegible]

[illegible]

Micro-Trains Stock 1970 diesel accessories debuts a offering in four gas-road switcher in two-paint schemes, including Burlington Northern Santa Northern patchload and Great Northern as delivered scheme in four road numbers each. The HO-scale Gannon series model has road number-specific body styles and details, wire grab irons, and a detailed cab interior. Direct-current models retail for $39.95, versions with a dual-mode Tsunami2 sound decoder sell for $249.95. Release Trains, 800-638-4626, www.atlasrr.com.

Intermountain Division F7A and F7B diesel locomotives. Paint schemes on these new additions to the WalthersProto line include Burlington Northern, Canadian National (1971 to 1987 reliveries), Chesapeake & Ohio (1992-1994 "kids logo cover" scheme), and Union Pacific. The HO-scale models feature underset specific details, factory-installed wire grab irons, and a dual-mode SoundTraxx Tsunami sound decoder. Single A units ($$$), DA, and DB/C sell for $219.98 each; F7A-B sets are $439.98. Visit A. Walthers Inc., 414-527-0770, www.walthers.com.

and rod. Underscored model also sold ($$$) ($$$.99). Kadee® footpegs and plastic hood and brake lamp covers. Atlas Model Railroad Co., 800-847-8456, www.atlasrr.com.

• Assorted UP3 International 40ft reefer vehicles. Single-axle roof-mounted, dual-axle side-mounted, and single-axle tank cars. Brass-to-metal logo and roadnum-decal logo. 40 ft. each. Intermountain Inc. Visit A. Walthers Inc., 414-527-0770, www.walthers.com.

† Intermodal yard pavement kit. Injection-molded plastic kit with realistic cut lines for overpasses, backdrop-mounting brackets (year and scale kit that adds grade crossing activity for truck and crane scenes. Can be expanded with additional kits. $14.98. Cornerstone Series. Visit A. Walthers Inc., 414-527-0770, www.walthers.com.

N scale locomotives

• Electric Mainline Division (MP15DC) diesel locomotive. Four paint schemes: CSX, KANSAS CITY Locomotive Group, Kansas City Southern (two road numbers), Maintenance & Way, Boeing & Northern, and Union Pacific. Twin numbers per scheme (some road numbers unavailable). Scale speed motor with dual flywheels, separately applied uncoupling levers, and illuminated cupolas. Digital Command Control sound decoder. $$$.95. Atlas Model Railroad Co., 800-847-8456, www.atlasrr.com.

† Electric Mainline Division SD40-2 diesel locomotive. DC. Rail-red, white, and black (CSX) Chicago & Erie-repainting scenes. Four unit-style engines. C-30 (blue, yellow, and green). Cornerstone & Wyoming Frederick Packer No. in one road number. Rapid Line, Penn & Eastern as three numbers, Indiana Rail Road (three numbers), Montana Rail Link (two numbers), Nebraska Central (three numbers), Southwest Limited, St. Lawrence & Hudson, and Union Pacific (six numbers). Three numbers per scheme motor control. Separately applied details, all wheel drive and electrical pickup, and working ditch lights as appropriate. Direct-current model ($$$.95), sound ($$$). LokSound 5 mini DCC-ready decoder ($$$.95), and DCC + Universal Sound Decoder ($$$.95). Soundtraxx Railway Co., 800-347-2346, www.intermountain-railway.com.

• Western Pacific Electro-Motive Division F7A diesel locomotives. Two F7A (orange and white road #), #28, and F7C (green and orange stripes). Prototype-specific details, wire grab irons, and etched metal details.

Intermodal ski boat. Wide-style (by Ken. These WalthersCornerstone models are released for Central Chicago & North Western, Coast Orchard & Egyptian Archives, Topeka & Santa Fe Boston & Maine, and Illinois Central ("Piggyback"). This style (non-invaded/plastic lift) auto trailers have molded hospital raised and sculpted detailing gear. Your with Rail/Air piggyback service, and scale mail-detail. 4 new cars: $$$. Visit A. Walthers Inc., 414-527-0770, www.walthers.com.

Club offerings

• Hocking Valley 40-foot gondola Accurail HO scale kit decorated for the Central Ohio Model Railroad Club. Two road numbers (3340 and 3357) $42 each plus $6 shipping for one car. Add $1 shipping for each additional car. Ohio residents add 7.5 percent sales tax. Check or money order to COMRC, 2457 Clark Cav. #47, Progressive Rd., Washington, OH 43681

• Kentucky, Booneville & Southern three-bay covered hopper Accurail HO scale model produced for the Kentucky Model Railroad Museum. Kit, $25, assembled with Kadee couplers, $36. Shipping $3.00 per car. Payment by check or money order. Kentucky Model Railroad Museum, 117 South East Ave., Bowling Green, KY 42101

• Ocala Midland 89 transfer caboose Model Image HO scale model decorated for the Ocala Model Railroaders Railway Preservation Society Inc. Two road numbers, choice, $49.99, free carry, $99. Shipping $5 per car, $10 for two cars. Money orders to Ocala Model Railroaders, P.O. Box 4235, Ocala, FL 34478-4235

• Railroad Museum of Long Island "Steam Up LIRR 24" 40-foot boxcar Rochester HO scale kitbash. One road number, $34.95 plus postage and money and handling included. 2 weeks-and boxcar orders add $10 shipping. Nine road numbers add $3.49 each car. Check or money order to RMLI, P.O. Box 307, Southold, NY 11971-0307; online orders at www.rmli.org

HO scale

N scale freight cars

N scale structures

N scale details and accessories

In Memoriam

O scale freight cars

$79.95. Atlas Model Railroad Co. 800-487-2887, www.atlasrr.com

• **Trinity 5,960-cubic-foot-capacity Hydra-Bay covered hopper.** Five paint schemes: Trinity 88, I Never Knew, Pittsburgh & Ohio running lights, Chicago Freight Car, Detroit, Toledo and Ironton, Pacific Coast (running lights and road numbers per photo). Accurate for Chicago Freight Car, otherwise as released. Metal wheelsets, body-mounted metal running boards and crossover platforms, and die-cast metal trucks and couplers. $34.95. Atlas Model Railroad Co., 800-487-2887, www.atlasrr.com.

Trinity 5,960-cubic-foot-capacity Pressure Differential covered hopper. This detail kit sells for $34.95 a decorated for Akmar Stanute Materials, Covington, Chemstrong American" wagon, six road numbers, five colors, and two-tie Southern or TJ numbers per scheme unless noted. A donation for every Covington "Hopping Initiative" car will be made to the Community Food Bank of New Jersey. Atlas Model Railroad Co., 800-487-2887, www.atlasrr.com

S scale freight cars

• **Cyclopean Power Co. (CPCX) ml-ft/ml-ft boxcar.** Cast assembled with road and assembly hardware. Includes decals for six tracks of couplers. $49.99. Colonial Models, www.coloni.com.

Z scale locomotives

• **Budd Rail Diesel Car.** Released in Penn Texas road numbers. Directional light working diode headlights, separately applied air hoses, and metal-axle couplers. American Z Line, 866-926-1797, www.americanzline.com.

• **General Electric ES44AC diesel locomotive.** Three paint schemes: Union Pacific. Three road numbers. Prototype-specific details, working cab lights, directional light working diode headlights, traction tires, and cut levers with dual brakeshoes. American Z Line, 866-926-1797, www.americanzline.com.

[illegible]

[illegible]

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PECO STREAMLINE

Electro-Motive (now EMD)'s demonstrator units no. 1211 and 1212 lead a train during a test run on BNSF Ry.'s Kelvin Subdivision, east of Trinidad, Colo., in October 2012. After touring the rails of prospective buyers, demonstrators like this are sold off and repainted in their new owners' liveries.

What's a "demonstrator" locomotive?

Q I'm doing research on the Wisconsin Central, Wisconsin & Southern, and the Soo Line. Some photos I've found refer to the locomotives as "demonstrators." What exactly is a demonstrator locomotive?

Bob Nichols, LaCrosse, Wis.

A When a locomotive manufacturer like Electro-Motive Diesel or General Electric comes out with a new model, it will build a few "demonstrator" models. It will then lend these locomotives to railroads for them to try out. In hopes the railroad's managers will see the advantages of the new model and order some for their system, since the demonstrator locomotives don't belong to the railroads, they're painted in promotional schemes featuring the manufacturer's name and logo instead of the railroad's. The demonstrators usually make their tour of several railroads before being sold and repainted in the new owner's livery.

Q We are joined the Army in February and due to COVID-19, we haven't been able to see him. Hopefully, he will be home soon. I'd like to surprise him by installing lights in all his cabooses. He uses DCC, and I'd like to know the best way to light them. All his cabooses have metal wheels. Thanks for any help you can provide.

Ron Koepfner, city unknown

A One caveat like a thoughtful gift. Two-rail engines are getting pricey, even for others and the cabooses for installing wheel wipers. Check out the article "Power pickups for rolling stock" in our January 2019 issue.

Second, you'll want to get some DCC-compatible decoders when called lighting and decoders to install in each caboose. Since the only thing that do a lighting and motion control on several different manufacturers' locomotives.

There isn't a more wide LED for the interior lighting, with a resistor to protect it (for a single LED it should need a 1,000Ω 1w). If the light comes on, then, switch to a smaller one). Then, hook up the decoder's power leads to the wheel wipers and a function output to the LED. Are some questions we have to do that, check out the "DCC Current" column by April 2021 in "Everything 2021." If not or have an idea? Here's the magazine's e-mail address. Send us your questions and comments to mrmail@kalmbach.com. Include your full name and postal address. Interest by subscribing to our online Archive at mrmagazine.com/archive. CopyClark, no one knows.

Q What is the purpose of the rectangles at each end of most N scale track? Google has no info I could find.

Chris Hines, city not given

A Are they plastic and attached to the end? They are meant to represent the rail tie at the end of the track section. If rail joiners are to be on the rail, the last rail can't be attached to the rail tie at the end. So this last rail is supported by separate pieces on either side of the rail, attached to the adjacent tie. Molded on plastic number a temporary cut piece "on bridge" will also save the track a joined and bent to the smallest radius there still might not expand inside the track from the rail.

Q Cody Emma says he likes paint when painting couplers. I'm using Model Master Railroad for Brass. What is his recommendation? (3 in all?)

Edward Nally, Bartonville, Texas

A Among Technical Editor Cody Emma explains: "When I automatic couplers, I use a mixture of paint thinned with 1 drop a 70 percent isopropyl alcohol. The alcohol will evaporate slightly depending on the type of thinner used.

"The key thing to remember when airbrushing couplers is to don't want to gum up the working parts. To avoid this, you can either mask up the parts in light brown or spray the paint on at a specific angle where it hits the coupler. The latter can be achieved by holding the airbrush farther from the couplers at an 45° (or using a higher air pressure (20–40 psi)."

Q I recently built a small switching layout and have a question about operators. Are locomotives permitted to have cars at both ends when making switching maneuvers?

Bob Hampton, Channelview, Texas

A Every railroad has its own operating rules. Although the rules are pretty much the same between railroads, an individual railroad might have a rule governing such maneuvers. If your photocopy doesn't the prevailing rule is always likely true. "In case of doubt or uncertainty, play safe (and) a must be taken," most likely used nationally basic rules governing things like efficient and

Send questions and tips to mrmail@kalmbach.com.

of equipment and implement lines that might work to encourage coloring contests, reform to at-risk concerns that a General Notice to that effect usually precedes the General Rules in the employee handbook. "Safety is of the time-honored in the discharge of duty."

So if the railroad doesn't have a safe glove-switching code, you're both sides of the engine — and that's worth a specific rule that I'd be surprised if am did — the question is whether doing so is the safest way to do things. It'd would be worth a peek over the more while switching locations. Does the engineer need living there along. If doing so would obstruct the engineer's view, then he never that watchmen shall be part there.

Basically, the engineer is called upon to run the Locomotive cover, but it doesn't mean a agreement he never runs down on the side of safety. And usually, that means pushing cars on the west-end switching the living, and looking ahead again to separate movements, rather than dragging along cars on the other side of the engine.

I have a Union Pacific FEF 4-8-4 steam locomotive. It has a red light above the headlight. Can you tell me how it should be used? What's the rule for the front red light?

Brad Cox | Florence, Wisconsin

One red light on your locomotive is a fixed light, or marker, for an excursion train, the fixed signal Light I in the Union Pacific does mustering, but lights were used as emergency stop sig nals. They weren't turned on in normal operation. I'm realistic, the excellence is usually associated by finding or thinking the light warning finds.

I model in HO scale. Can you give me an idea how to install a relay snap-switch machine with a ramsey cable (all allowing for full function?

Andrew Pollock, Winnipeg, Man.

Enough. Atlas snap switch machines are intended to regulate concrete ramsey snap switch machines they're aimed down large, making their appearance a little incongruous on realize what one do with them. We've also people have tried to a ramsey, in case interest I can online, the possible moved the switch machine upside down and hard wards on the stone rail will spread to the right down level, covered it with another wood type, then formed it as before. One technique will let a leftside heap by the side of the track, and ultimately was works with the instantly triggered type of switch machine. It means we messed with. One level's work.

As an alternative, Atlas also makes under-table remote switch machines. Other available models can't as it allows fishplates, scale wood rockers, linking several ground throws and switch stands controlled to be operated track-wise. Some modelers use rubber cables (once a material in flexible plastic tubes) to link turnouts using fascia mounted pull knobs. And there are other underlable options, including Fulcrum Air Corporation, Allen Point, and Walthers Layout Control brands. Any of these options would work with most switches.

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I've been a Model Railroader since 1976 and still have all of my back issues. Which issues contained the articles on the rebuilding of the Wisconsin & Southern boxcar? In particular, those related to the RDC flipper door?

Dale Evans, city and state

The Wisconsin & Southern (WSOR) was our project railroad for 1998. Articles were scattered over a number of issues, with the RDC flipper door in the December issue. Check our table of contents at mrmag.com/table-of-contents to find the issue you're looking for.

You might also be interested to know that we recently published a special issue all about our WSOR-I Fusion Update. It's been out for a few months, and there's a good chance you can find a copy at your local hobby shop. You can order it at kalmbachstore.com/wsor-i-special-issue.

READER TIP

More help for Great Domes

In further response to Jeff Gumbert's question about his Walthers Great Northern car derailing (December 2020), there may be another answer.

On curves, the tops of the truck-centerpin snap on the car body don't ride on the metal tabs that are part of the car's lighting system.

The solution is to grind down the high spots on the trucks. On the Pullman-Standard domes used on the Milwaukee Road, Canadian National and VIA Rail, the problem is caused by the plastic detail part added to the outside of the sideframe. Smoothing the part down with a file will solve the problem.

The Great Northern dome has different trucks, and the highest points on the truck are the four isolator pads, shown in the photo above. Filing or sanding enough off of these two pads should solve the problem.

I discovered this problem and the solution after finishing my Great Northern detailed on good track with broad curves, despite everything being in gauge. — John Day, Vancouver, B.C.

A pair passenger car trucks are shaping on the underframe, rolling above the high points.

ATHEARN GENESIS
ATHEARN TOP DEALER
ATHEARN READY TO RUN

By Jon Kelly

Putting the go in a beautiful N scale engine

A tricky performance problem led Jon Kelly to dig – disappointingly for Atlas N-scale Dash 9s – deeper than he'd ever dug before

One of the most puzzling N-scale locomotive problems I've encountered came with the new Atlas Dash 9s. I purchased a pair, the passenger-car mailliner-paint locomotives with the small number boards and the new, more pointed-nose cab. Both engines were brand-new, and they were painted in the gorgeous blue and white scheme. I didn't just want the pair; I wanted to display them together.

I think I experience some of the frustrations of having more locomotives than track you're ashamed to admit. I'm sure they look fine, more operators think they'd like what they see – moving, not fixed in place, not on a coat of dark paint and some ballast, and don't have to buy them yet.

These Atlas were fitted with DCC decoders, so the Atlas boards were tuned to look great on my Atlas-Digitrax Pure Series, and I assigned them to the locomotive header, which would always use motor fully to the rules implemented.

Both the locomotive headers, which served the line, and the locos in, which had running lights, were worn on motors power to the road. We, and on the pass, was to offer our locos power as well as locomotives that couldn't from other lines. This was a good lesson to the boarder who wants to follow a prototype but still have some variety.

Big, no-go performance. I'd brought these two engines

Motor contact with the Digital Command Control decoder was the problem. To ensure good contact, Jon optimally soldered the motor leads to the decoder.

Motor to decoder solder

Motor lead

Rail decoder

with me to a model railroad club, and when I took the locos on the tracks, they were a delight to watch. They ran silky smooth, even in quiet mode (sound), have more or all locomotives, that urgent performance didn't last.

These locomotives would be going along great, but then one or the other would just quit. I'd take off the body shell, look with the machine, toggle the digital command control (DCC) board around to no avail, and eventually get it going. Then after putting the shell back on, it might run or it might not, and be back being very, very cranky.

The headlights stayed on, so contact between the decoder and the locomotive frame was good. That meant the culprit had to be poor contact between the motor and the decoder.

Now, over the years I've learned that it's rare to overhaul a plug and play decoder and the engine won't run, the problem is always always the contact between the decoder and the motor. I wouldn't be in a to take the decoder back out and check to contact plate. I do this with the blade of a common ordinary lead pencil, and never knew that within the problem.

I've tried to make this step part of my model railroad preventive maintenance to get to do or more than I should. Any day you have to hand the locos and a bit to get rolling some pressure for good contact but as a general rule, once you get an engine going it'll keep on. The recommended off behavior was a revelation to me.

A solution. Finally, I can publish the book that the dealer finished and that I'm sure and didn't even enough pressure on the decoder to make solid contact. I'd never encountered this problem on locomotive (by warranty), which had come to me every other before. I searched two discussion groups, Trainboard and The Railroad, and found that it wasn't alone.

The solution I could, which I found in one of the discussion threads, was to solder the motor leads on the board. This may not be the only solution to the fact one, but it is very fine.

First, I took the motors out of the locomotives and tested it to my soldering with soldering tips. Then I carefully and gently turned the tips of the motor leads and the contact pads on the decoder. Add no brand, and apply the connections.

I made sure my solder was good and hot, and I was over fast, and got that soldering iron to and not to stick to anything. This first helped plenty on the first two quickly, and I only used a very limited of solder. This was very, the run as more as it normally.

Most of you still recognize that last paragraph could easily ground. I'd only in a but could. But the small man-mail, worth it. These thankful locomotives now run as good as they look.

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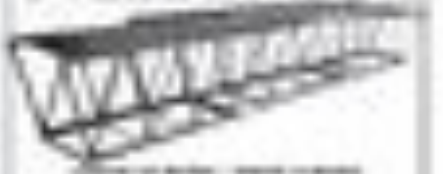

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False floors make load swapping easy

Roger Kujawa and Bruce Brandner came up with the idea of using false floors to secure trains equipment and other loads on their HO flatcars. This allows them to run properly loaded or empty flatcars during operating sessions on Roger's Atlantic & Great Western RR. Photos by Jim Hediger

Prototypic operations has been a goal of mine through many eras of modeling. I especially enjoy the show & tell/operation role playing game. But whether in an operations setting or just some casual running around my Atlantic & Great Western RR

Maintaining the illusion of loaded and empty cars is one of the reasons I'm here building cars with removable loads. Hardwood cars can travel to anywhere at loads since there's no way to secure the loads. However, there's no question about an open top car or a gon's plastic walls when a car's loaded or empty status

Most freight and gondola loads haven't been a problem, but I was swapped when it comes to ore hoppers. Not as I couldn't figure out how to secure them and ballast reliably. Heavy machinery and other equipment and still easier than unloadable.

I tried using magnets that would "grab" the cars and weights, but often that still made the loads slide off. Adding a great deal weighed more than difficult to every loads. I also got to the last removed the idea had prevented, but I didn't like the idea of a heavy deck that created the cars underside. I wound up gluing all my loads to the flatcars. When white, I placed up a lot of interesting loads since and one load required the purchase of another flatcar to load it.

I'm a member of the Tomorrow Models Railroad Association's Layout Operations Special Interest Group, so I called the SIG's Internet discussion group saying I had the idea. I'd seen reference to my problem some times any model flatcar. Someone who knew only 'HI' replies were from me.

Roger's innovative idea I'm to work loads that were attached to removable flatcar decks. The removable deck sits on top and covers the car's original deck. Holes in the corner holes pockets keep the load from shifting in transit.

I took Bruce's plan and ran with it. I obtained Evergreen no. 1808 styrene siding that matched the decking on my old-time AT prototype flatcars. The boards are 4-scale-foot x 12' stock, so I could make flatcar up to 12' long.

I used an inexpensive Model Railroad scale ruler to lay out the deck. However, the first wood deck was a little too flexible, so I later used a .030" styrene backer underneath to make it strong enough to be scale. I used no 6-48 deck screws to hold the deck. Note: I used a laser's sharp rectangular punch to notch the plastic deck edges to match the width of the wood floor's side pockets. A dremel or the plastic or the car's 1/4

Roger used the wood deck as a template to cut false floors from scribed styrene siding and punch out the slots under brackets along both sides

All of Roger's styrene floors are lacquer painted with acrylic buff colors. Then he stains them with grays and browns. The car type is marked under the load

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WORKSHOPTIPS

Try sanders that flare and fly head. Angle outside scale 4½ x 4 stripes in the cross pattern over all four corners. The stakes keep the load from shifting.

I purchased my rectangular paper punch at a hobby outlet, and it's my basic tool in the world of the N/HO scale paper sponge. I also cut a notch in the end of each flare for the brake wheel.

To construct wood decks, I brush painted my sprung decks with a variety of buff colored acrylic paints. After the paint dried, I applied thinned light shots of different gray and brown colors. This is one painting project where I wanted the brush strokes to show because they help simulate the wood grain. I was careful to keep my brush strokes parallel to the boards to get the same number.

Use any old dead flats. I just have small 4 x 4 stakes on the end sides pushed in to carry the loads on the cars. Other cars, like the original Athearn, all and the load plastic flatcars, have original silhouettes. If the scale products are naturally the deck. The stakes would keep the load from shifting side to side, but not end to end. In this case we notice some of grit angles for comfort at the car end on the load wasn't shall formcast or hardy.

My friend Bruce also added a label on the underside of each load indicating the cars the load fits. Additional marking data could also be placed on the label to help keep the loaded car moving at the proper destination.

Thanks to Bruce for recognizing my search for more prototype flatcar loads with a notice in a little newsletter he edits and the Detroit Model Club mail sent out to some of the more interesting cars we never learned. — Roger Kopenec, Hanover, MI

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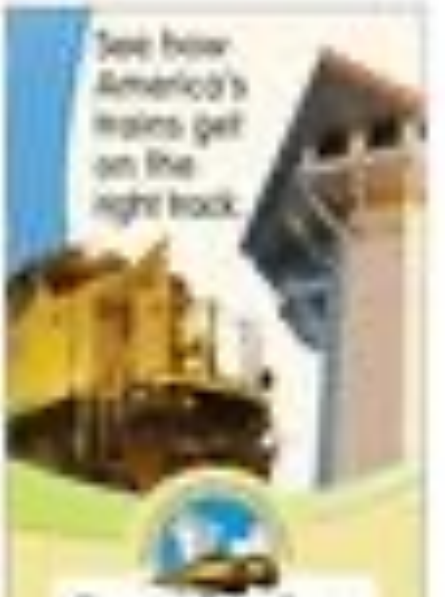

Make Your Dream Layout a Reality!

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Turnout control panels make it easy for operators to live hand to reach turnouts. Pete Sweeney explains how he made panels like the one shown here for his HO scale Union Pacific Evansville-Saleshanzee layout. PHOTO BY PETE SWEENEY

How to build and wire a turnout control panel

Have you been here before? Starting switching a crowded benchwork railroad and need to run a hundred feet to the back of the layout. You carefully reach across, hoping that one short bench won't detail on the process. But there's a simpler way to control hard-to-reach turnouts. Try building a turnout control panel.

Though a panel may sound like a complicated project, it's not. All I need for mine was some aluminum sheet, some paint, and toggle switches. (One can write the toggle depends on the type of switch motors or machine that you use.

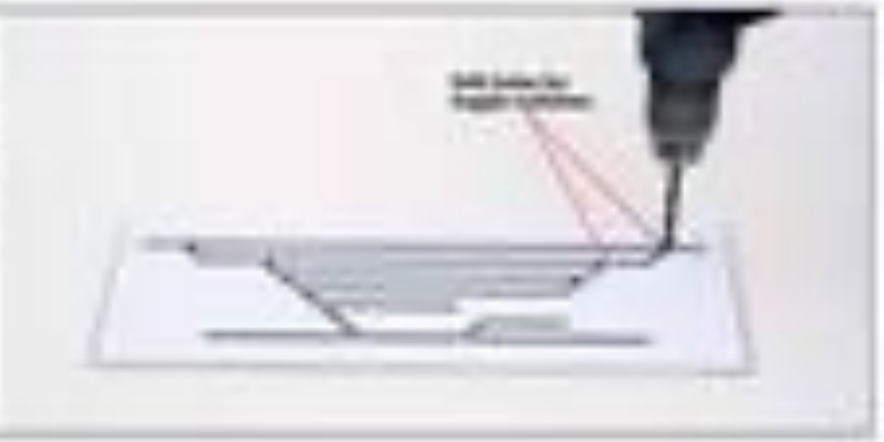
When building panels, you can point them to match the other panels on your layout's the fascia like I did. This is an achievable weekend project that will make operating your model railroad one more enjoyable.

Building the panel

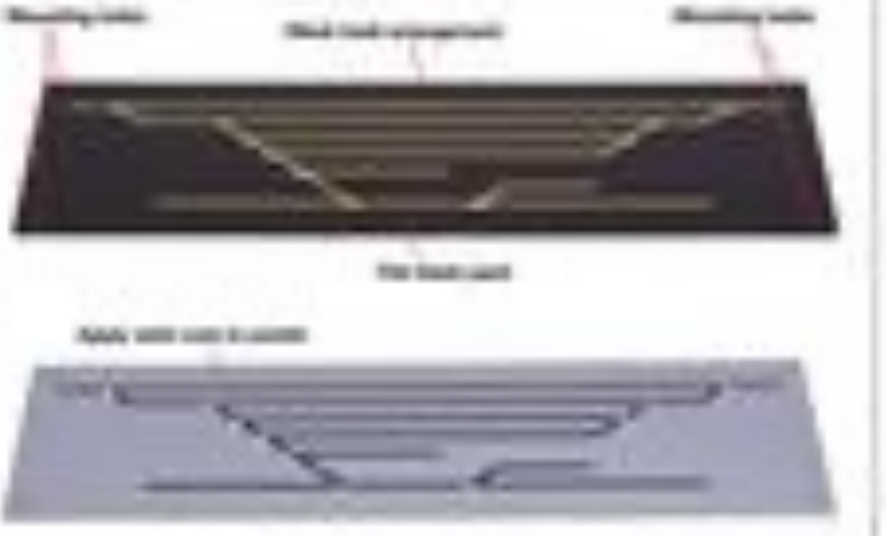
I used 3mm control-panel thick 4x4 aluminum sheet. I prefer using aluminum for the control panels as it's more rigid than styrene and less likely to warp.

With the aluminum cut to size, I used my computer to make actual-size drawings of the track arrangements on Evansville layout, Duluth Extension, and the hidden staging yard. I printed the illustrations on paper and attached them to the aluminum with 3M repositionable Spray Mount.

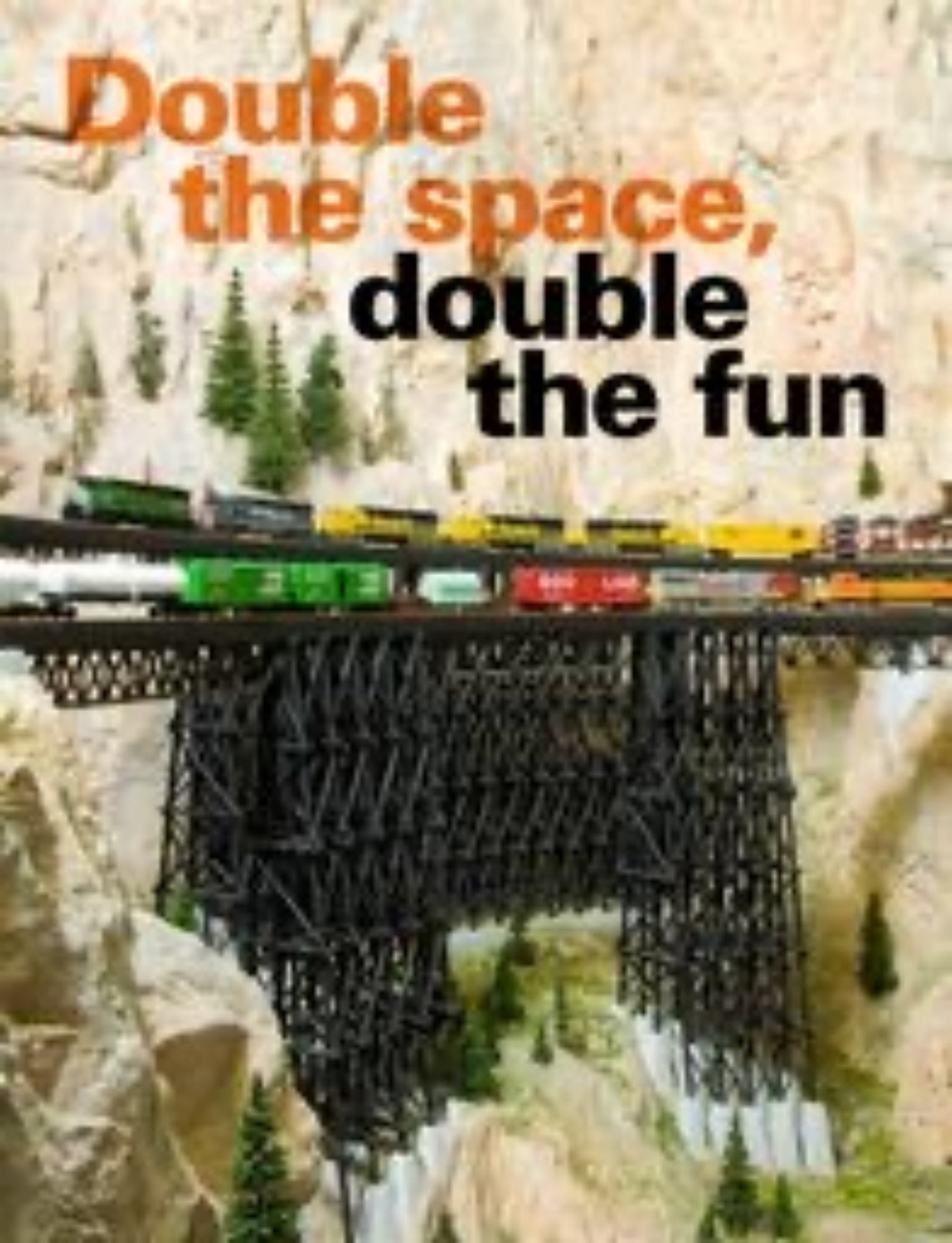
Step 1 Building the panel (cont'd)



Step 2 Painting



Step 3 Wiring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1. A colorful variety of motive power is on display at the Jo-mak Minnesota roundhouse. Despite the Great Northern name, James doesn't model a particular prototype railroad or era. The doors on the roundhouse are all motorized.

An N scale layout that appeared in MR 22 years ago expands with new city and mountain scenes

By James Bauer • Photos by Rob Spence

In December 1996, when our N scale railroad was first featured in *Model Railroader*, I had vague plans to expand it at some time in the future. The opportunity to do so came along a few years later, when we bought our present home. We'd built a large vacant room right next to my train room.

My wife didn't have a problem with it, so I tore a wall out and replaced it with a support beam, expanding my N × 7½ train room to 11 × 21½. This gave me more options, but the main thing I wanted

1. Trains pass through deep, craggy canyons on James Bauer's N scale Great Northern layout. Since James' model railroad appeared in the December 1996 *Model Railroader*, James has more than doubled its size, adding spectacular mountain scenes

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CONTINUED ON PAGE 44

A This overall shot of Jackson 'N-scale empire shows Kosciusko and Wheaworks in the foreground, looking toward the new section of the layout. Jackson had to increase the height of the mountain at left after his daughter said that it shouldn't be taller than the sun.

A Trains play a night game on the softball diamond at Wheaworks. Jackson included the scene because he used to play softball.

The layout at a glance

Name: Great Northern Rly
Scale: N (1/160.5)
Size: 12 x 24 feet
Prototype: Fictitious
Locale: Montana
Era: 1920s
Style: around the walls
Minimum size: 10ft 6in
Minimum radius: 9"
Minimum turnout: no. 4
Maximum grade: 3 percent
Benchwork: open grid and risering
Height: 32" to 38"
Roadbed: plywood
Track: Atlas code 100 flextrack
Scenery: Hydrocal over chicken wire
Backdrop: hand painted on vinyl
Control: DC walk-around

Great Northern Railway

A route in the Rocky Mountains between Minneapolis and Seattle, the Great Northern Railway was famous for its mountain scenery and its Mallet locomotives.

Running past Glacier and the Columbia River, the railway's mainline was a popular choice for passengers.

9. Horses Rest is more animated scenes on his layout. "I've tried to fill this niche [vignettes, and concealed machinery like hoppers with live coal loads. The darkness in the layout room is a deliberate 'atmosphere' choice."

The room itself is connected with trains and those electric sockets. One socket constantly sends ten-cent shaft, one can be up and one km down. The trains open and close doors as passes the other two stations. The first station pulls the Turbo cable up and a few seconds. Next after a few turns accurate plastic the second station surface the cable by a down. A few seconds later, the cycle repeats. I also designed an astounding area where the coal loads can be completed.

There are other automated accessories on the layout. I have a semi-trailer where grandson with each load was weighed. The cars are displayed by an animated model that belongs. I also have a scratch built sawmill with a working log conveyor made the trestling.

Raising rocky mountains

My favourite prototype is the Canadian Pacific route through the Canadian Rockies, with views of snowcapped mountains. Some of the mountains painted on my walls are inspired by the Canadian Rockies. I want to be under the impression Cowboy and I'm climbed quite a few of those in our life, so memories had to dominate this layout.

I created two years to form annual chilly and a couple of long, high mountain that also come from an old hopping in the living above our house. An upper and lower track works around this area.

The largest pinnacle starts at a base of 1 foot above the floor and rises to more than 4 feet high. A unifying work as we as aesthetic task. It was originally around a foot even, but my daughter said it showed be taller than me, so no up board accurate.

I appointed the mountains by normal rigid foam insulation and trimming. Pockets were created at the top to shape them applying thickened coatings to the frames. To make my scenic rock walls, I bricked together 12 coatings (some with small sizes than were at old brown weight). I can make all these rocks in bare rubber molds I made three molds I liked. Some of the molds I made are more than a square foot in size.

I painted the rocks with thinned acrylic paint, a little applied with spray bottles. I also brushed on a combo of grays and blacks. I painted the more vivid white and added scenery with acrylics. For an artist, is this part was easy to do. I painted the scenes all the trail to the ceiling.

Not all the scenery is static. I've also installed modules like lightning and thunder. One I put in the ceiling and one behind the top of a dominion for a thunder effect. One module has one clap of thunder, and the other two. There are electrical adhering blocks on the opposite of different times. But I wasn't completely satisfied because before and after they come on, there's no sound to be heard. I have a sound system in the mid-west room, so I thought a thunderstorm sound effect [illegible] would look like effect a million. I recently purchased a Big Bite with sound card blowing to virtually no the sound of a thunderstorm is quite a pleasing effect.

I purchased a miniature video camera and installed it up in Bell so I can see the name of the engineer. When I first added Bell, it is to see every railroad from a different perspective. I watched to see as a reference to use in all the models on the track for a different view. While most are from a couple of inches distance in front of the camera for better viewer.

Figures and details

At first I just left painting figures into the scenes but I began to place a few every night after work. Now I have more

A Big Sky Log Distributors in west-central Missouri, hard on the rail part of the layout, owner, a professional railroad artist, hand-painted the realistic Rustic Mountain backdrops.

Meet James Bauer

James Bauer is a wildlife and landscape artist who studied art at the University of Montana. His detailed art style earned him credit in painting the layout's realistic backgrounds. He lives in Lolo, Mont., among the mountains he loves. "Though snow months has curtailed my mountain climbing and sports activities, in addition to model railroading he still enjoys photography, fishing, and anything else to do with the great outdoors."

The **train** ship

A knotty storage problem with a unique solution

by Richard A. Crabb | Narrative: Digital | Photos by the author

BOVE: The finished hull sits in front of the workshop. With its stern resting on the ground, the vessel sits almost level with its normal waterline.

EFT: The storage cradle with blocks and the two-axle flat car ready to go under the hull as the ship goes on the train.

I have always been fascinated by the way boats and the railroading enthusiasts seem to share many common traits. People with either one a hobby in the garage or office usually building small ships like scale models that sometimes

My railroad runs around a pond that is just close to my house, garage, or other out buildings on my property. The pond is the size of a small suburban lot and is shaped by trees. The short leg is covered by a heart of trees that sometimes casts great

The cradle was made great with our buildings, vehicles, human figures, and much. Unfortunately, the area contains by dead trees, limbs, and other up-and-coming thunderstorms, storm and branches. Most of my buildings are sited in woods and much

The big cedar construction. The entire hull was welded up from steel and set up on 5" thickness.

The interior of the clay scale construction. Note the scale figure and vehicle. A plywood deck is support the hull until it can be interior fiberglassed.

Lowering the hull to the pool. The 110 pound ship required a tractor with hydraulics to move it.

The author sets the hull.

up and is very rolling stable. However, I am reluctant to leave any rolling stock on the track.

Unique Inspiration

Five years after I built my Brooklyn Bridge, I walked, carrying my cane as a cane, the 11 yards from the house to the pond making many trips so as not to be seen. Over the weekend I would collect scale the engines and load the rolling stock on the ready which was not a consistent occurrence.

In 1944, I had a decision to make: spend $2,000 on a live steamer or an equivalent amount of money on a project that had always been in the back of my mind. I have always been fascinated by shipping on the Chesapeake Bay. When my own boat (an old 30' Trojan), I could watch the tugs pushing the barges. I took the seventh century at every passed the world called the Baltimore Clipper and made the trade and I started having fond times the Potomac River. I guess it started when I was a child and I was fascinated by the ships that sailed up and down

Two hatch-sealed allow for storage of AA' of area. Below the main deck is additional storage for transformers, tools, and more ballast deck.

Looking forward through the bow gear. An hinged deck is evident, affording space in the hold.

Although the ship is engineered, it can be manoeuvred with radio controlled tug.

The ship, fully loaded and ready for the wharf. Inset: ground. Weatherproof covers, a couple of which can be seen at the far right on the deck, protect the ship's cargo.

common ship design and right hull.

Plastic, wood, or steel?

I was an experienced MSC builder, so my main model ship would be made of steel. I have no experience doing repairs so I don't know that not other hull is more suitable. All grounds fill why that I would. I was able to calculate everything I needed to build the model.

I drew up the plans and had a local shop shop and bender the sheet metal. We [ ] to the ship to with accuracy 1/8"" long. The bottom is made of ¼" and ¾" steel. The sides and deck are ¼" steel and the superstructure is all aluminium. The weight is estimated at the 750 pounds.

Inside is a mish-bash of plywood, melt pieces, the assemblies the model allows for easy parallel model. The plywood deck is hinged (overlap) to the length of the ship to allow access to the hold. The stern is flat and is deck gate. Two common rudimentary allow the boat stands to rest the ship through the long gate into a wide deck and hinge connecting to the mainframe.

The ship has four large hatches and two small hatches that can be removed for access to the interior but are completely water tight. The ship is so watertight that it can act as the only drink of vessel inside the hull.

Hull protection

Since I can simply store the motor onto the ship. With a little searching, it was able to pack a 40' mate on the front inside inside the ship. The bottom of the ship is used to store lead counterweights and other non-sensitive materials, as well as some main cars. Because the ship stays in the water most, I eliminated from putting sensitive propellers or other safer non-welded devices inside, just standing in covered with protected water.

Once the ready the ship has numerous major transformers, high winds, servos, and mechanically falling low-boat-low with no damage. The panel known to the maintainers again with no difficulty on the ship other than the paint. Every three years it will the ship out of the water and, with the help of my engine boats, does it upside down and apply a fresh coat of bottom paint.

I set out I did a couple mistakes and realized up a few [ ] that might have caused problems down the road. Again, I conditioned the hull, primed a time and, sometimes, and paint is a one of three two-part paints.

Most of the boiler water tank used a ¼" think and in some places, ½" think. Every bottom panel is welded with a long seam in case through. The project a months seven tools. Over the years I have added a bilge pump, a bargain alarm, a printer sup-ply, and a charging system. The mast is powered by 12V DC and I can use engines independently inside the ship.

One project leads to another

I have built two 1/24-scale tugs, radio controlled, to engineer my brother Bret. I have two commercial two 4 barges out of dimensions which was managed optional work my Bret dandy.

The was no sense I had a proven remotely inherit owned my Phoenix, would use to mid into the pond. I spent[d] seven and a [bad] in run with complement pic and it will works just like Browning's recipe. Was close to stolen is constantly a challenge for my rudimental a short distance than was when I took were.

THE DASH 9 FOR RIVET COUNTERS
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HO N
OPERATOR

Lehigh & New England Nexus roll across the well-visioning drop gate bridge spanning an aisle-wit cherry Extenders's HO-scale Annapolis-area layout. Hardboard strips are attached to both sides of the bridge to prevent potential derailment disasters.

Build a sliding lift-and-pivot gate for easy access

This clever self-stowing gate spans a layout aisle

By Jerry Golabiak • Photos by the author

Most track plansers try hard to avoid duckunders, but sometimes we can't avoid them. Entries or swinging gate help, but hideouts can be chancy to handle and slow, and swinging gate always presents alignment challenges. Here's a simple self-aligning lift gate that we trialed (say historical) designed. It's easy to operate and it stows conveniently, clear of traffic, against a cable tag.

This swinging bridge is fabricated from a wide-tensed steel channel, slightly a deck bridge connected across one end. The bridge is mounted inadequate the bridge deck to create a tight angle between the deck and the bridge. Opening the bridge is a matter of raising the hinged end so the free end of the gate slides from rest of its bending position, and pivots the backwards. Then the bridge and the braced slide can be lowered to their normal upward position against a leg, as shown in **fig. 1**.

Make and fit the span

I began the project by carefully measuring the size of the aisle gate. The height of the unbroadfilled depth the bottom rises to govern those two lengths of the bridge span across the aisle. The height is critical to clearing the open gate when it's swinging straight down. The clearance above the unbroadfilled deck allow the vertical drawer slide to extend fully on the free end of the span unhindered, even

greatly close the road position so it can lock down without interference.

I cut a strip of ¼" (6)-wood (¼" wide to create our single track bridge span, calling it a bit over 48" longer than the aisle width. This provided sufficient extra material to extend the hinge assembly on one side and the end pocket on the other so they didn't protrude into the aisle.

Depending on the scale, the span could be made from plasticwood channel and constructed from scratch.

I completed the span by laminating ¼" Homasote cardboard onto the deck with carpenter's glue. See **fig. 2**. When the glue hardened, I sanded the bottom of the plywood bridge to remove any splinters or rough edges.

Careful alignment

I installed the 1 x 2 bushings so the bevels could accept the spur's top surface evenly. Be sure to check the alignment of the bushings as shown in the **fig. J** above. Be careful in marking the screwhole spot and both of the spur's two 1 x 2 supports. Starting at this time, I made a 45° degree cut through the spur to create the slot block for the bushing. See **fig. D** on page 44. Cutting this piece from the plywood spur pre-mount a good fit.

Using a rasp and sandpaper, I rounded off the bottom butt of the spur's angled end, which also covers the bushing block. This rounded end allows the spur to rise freely and slide easily from the bushing block as the opposite (hinged) end is lifted.

I installed some protective plates on the mating faces of the spur and bushing block to eliminate noise. (Now I set the spur in place and fastened the bushing block in place via 4 screws each). We had only basic use to add and mounting pieces on both sides of the bushing block to guide the drop gate as it closes and aligns it accurately, as seen in **fig. K** on page 44.

Drawer slide and hinge assembly

We had to mount the removable hinge on the drawer slide that guides the lifting hinge. I wanted the side-down or drawer guides on display, in a better representation some cool chrome slide that had screwed into place.

I also attempted a 3" butt hinge, but exactly what transforms snap on 3" hinge would also work. There are a number of ways to attach the hinge to the end of the drawer slide. I had a friend weld the hinge to a 1" steel bar so I could just screw this assembly to the slide. See **fig. L**.

It would be best to drill a row of holes and pay close the hinge barrels on the slide, or assemble the parts with 6-32 screws and nuts. No matter how the parts are assembled, the hinge pins must be positioned at right angles to both the drawer slide and the spur. This ensures that the spur will sit properly and result in it's closed, and hang vertically when it's open.

Drawer slide installation

I added an extra 1 x 4 leg to the workbench that supports the drawer slide end of the bridge. My bridge is mounted for left handed operation, but that's a personal preference based on to

Fig. I. Open gate. When it's open, Jerry's gate drops down to hang in a vertical position in front of an extra leg that supports the hinged end of the bridge.

Fig. J. Bridge open. The main deck is made of ¼" plywood with a layer of Masonite glued across the top. The upper deck is handled as a countersunk

Fig. A: Landing block. A 45-degree cuts cut provides the landing block on the span's upper end. The rounded end on the span allows it to smoothly slip out on the hinged end to retract.

Fig. B: Steel guides. A steel mending strap is attached to each side of the landing block. These straps provide lateral alignment as the span slides into the landing pocket.

Fig. C: Hinged end. A brass slide mounted on the leg allows the hinge to move upward as the gate is lifted to release the span end of the bridge span.

Fig. D: Nailing points. Jerry and I continuously flexed each approaches and the bridge deck prior to nailing the final track runs through both joints.

location. If one plan to use several long spans, I recommend making them all the same for spacing standards.

I recessed the notch leg into the boardwalk so the hanging span didn't obstruct the gate. This leg is centered under the span and aligned at a right angle to the bridge. While it was glued, I attached the top of the leg to the fence with one bolt so that is the fixed.

Then I saw to the span so it just clears the landing block with the hinge and on top of the opposite approach. Then I marked and trimmed off the span so it extended about 6" beyond the hinge. I also trimmed the matching approach back so the span would drop into place like **Fig. B**. By allowing the bridge span to extend beyond the hinge, the span rests on a solid support that provides ample and accurate vertical alignment.

With the span resting simply on its bearings at both ends, I clamped the hinge over to the underside of the span with the dovetail slide flush against the leg. I marked screwing holes for the slide and installed it on the leg with a pair of wood screws.

Now, with the hinge still clamped in place, I raised the mechanism of the span to make sure it opened and closed easily and functioned properly. I also checked the lateral alignment at both ends. Finally, I removed the hinge so the span with wood screws and made a final test.

Completing the installation

I secured a 3" (oversized) pull on the leg and a rubber stop to support the drop span when it's opened, reducing stress on the dovetail slide. This cushioning also protects the span in case it's dropped.

At this point, I checked the closed bridge and its approaches to make sure that everything was perfect for the road bed and track. Any height differences can be adjusted with thick acrylic shims.

When I had the smallest and track, I went straight across the span and both approaches, as seen in **Fig. D**, without worrying about the removable joints. I carefully glued the track in place over the joint locations at both ends of the span. Then I let the track cure for the span and its approaches before I used a razor saw to cut the track at both ends. I made the cuts directly over the hinge and pivot at both ends of the span, cutting all the way down through the cookie as shown in **Fig. E**. Then I used a needle file to smooth the cuts and to remove any rough edges on the rail ends.

For safety reasons, I added a plywood backboard block on the drop gate so

Fig. 1 Microswitch. This normally open microswitch is mounted under the landing end of the bridge so it energizes the interlocking circuit as the span starts to the landing block.

unit in the opening photo, the gate does a really neat job as well.

I also installed an interlocking circuit so car track power to the bridge and limited operation when it's open. A microswitch, **Fig. 1**, is mounted under the landing end to control this circuit. To be effective, the length of each approach block must be long enough to stop any locomotive or train short of the drop. And because of slowing rate of cars or trackage trains, extend the span bridge.

Since my lift gate has been in use, I've found it's nice to watch the mechanism of the gate motion. The gate actually pivots there until they are torn over a week. Now there's a note and some pictures as their spin and close the gate several times before they get the hang of lifting the bridge over the [illegible]

Gary Dziedzic and his wife, Luanne, live in Breckenridge, Colo., and Friendship, N.Y., where Gary's very active and HO scale Susquehanna layout is taking shape. He has authored four Trains articles. His e-mail address is [illegible]

Drop gate features

- Adapts to straights and curves of any radius.
- Durable enough for frequent use.
- Self-aligning, both vertically and horizontally.
- Simple to install and operate.
- Space saver, needs less space than a swinging gate.
- Easier to operate by a person.

"Locomotive" replaced "yard's #1" on this line of Kato GP40 Ex-Lansing ex Bob Kingsnorth's freelanced ND model Southern Transcontinental Ry. Layout runs Bob uses factory-painted models as the starting points for his freelanced paint schemes.

FREELANCED PAINT SCHEMES from factory-painted models

Selective repainting keeps details intact on a custom-decorated locomotive

By Bob Kingsnorth • Photos by the author

The small, quiet, and accurate diesel or electric models on today's layouts are better than at any time in the hobby. The precision of factory-applied lettering and the ability to highly customize the interior trim of a relatively inexpensive HO or smaller scale locomotive test the skills of even skilled hobbyists. Pick a road name, and you're likely to find a commercially detailed and painted scale model that could go on your local hobby shop shelf.

However, I'm a "freelancer" model railroader, one who finds a special interest in fictional railroads of his own creation. That left me in a quandary. If I were to start my freelance project with a detailed plastic locomotive model, it was clear I'd completely stripped the paint from it. I would have to take to detail the quality and detail of a factory-applied paint job.

Wanting to model scenes I'd seen in real railroads, I had some ideas in what I imagined the city that-became railroad, what it would look like because of repainting. I also have an early interest in lettering and numbers, which is just one of the

Fig. 1 Cotton swabs. Soft-bristled nylon brushes were more effective at removing lettering than a cotton swab. Once the swab gets saturated with paint and starts smearing the surface, Bob would switch to a new one. He used several handheld swabs while redecorating the six locomotives in this article.

Fig. 2 Disassembly. For all the locomotives, disassembling the models is a necessary step, including separating the cab from the body shell for the Rivet Counter. This step makes masking and repainting the cab's interior much easier.

Fig. 3 Silver is simple. The Tichy Santa Fe 2900-2 models were able to preserve the factory-painted silver window frames and black windshield gaskets as well as the builder's plate and other details on the cab's sides. He modified the number board lettering to be consistent with the fleet.

prowed for Rail Graphics's current Decals-on-demand program.

My favorite prototype diesel livery was a gold scheme for the Tennessee Central Railway (Tullahoma, Tenn.). Its blue and yellow Delight scheme, Humorous, or sometimes in Jason, is decorated models. I was fascinated by this paint job as a kid, so I knew I'd have to model a second diesel model, as both of these railroads owned many different types of Electro-Motive Division diesels appropriate for the layout—one model assignment I've made in this scale version of none of these. See "Designing a freelance paint scheme" on the next page for more ideas.

Selective paint removal

There is a common practice I hope to avoid by painting factory-painted plastic locomotives as closely as possible after chemical paint removal. This wasn't going to work if I wanted to keep most of the factory paint job intact. Straight painting over the yellow lettering and fascia would've made yellow. The materials I'd have proved tempting metal have a glowing yellow under the new paint.

My selective paint removal process involves repeated applications of a paint remover to a specific area on the model. I then use cotton swabs to scrub away the lettering, as shown in **Fig. 1**. I tried the toothbrushes, paintbrushes, and metal brushes, but nothing was as efficient as a cotton swab. It's important to change cotton swabs often. I went through 429 swabs to complete the locomotives.

The areas of the factory lettering I often used tan. It and the "F" blocks in a bolder font. When using a brush, I work slowly and with a gentle touch to avoid gouging the plastic.

Even after working with several tool options, the process remains one of wild and wild. Paint comes most easily from to assemble and more between pre-painted lines. For example, dry lettering on one model may be made removed with isopropyl alcohol, while on another model alcohol has little or no effect.

Follow along as I outline our tech-niques on factory-painted models from three different manufacturers: Kato, Intermountain, and Tichy.

Kato Santa Fe SD40-2

For my railroad's 1949 setting, I'm very to imagine a mix of weathered EMD SD40s in trucking maritime lengths. A mix of 16 pre-1983 scale SD40-2s in the Santa Fe yellow and blue warbonnet livery would be my starting point. I needed

Designing a freelance paint scheme

Bob's latest freelanced diesel project saw an F unit decorated for the Baltimore & Ohio as a starting point. Bob repainted the body shell and applied decals from a Minnesota Pennsylvania RR set.

I used both Sacra 4x and CSX liveries for my freelanced locomotive paint schemes. Readers will notice the different treatments on the locomotive fronts, starting from SD40-2's yellow cab to the Dash-8's yellow front and small triangle of yellow on the sides to the AC4400's simple yellow front.

These paint schemes all help me know the passage of time on my rail road. The SD40-2 and Dash-8s were well for my layout's 1985 era, the former wouldn't have been at the end of their careers while the latter wouldn't be new. When I want to run my layout in a modern day setting I'll use the AC4400s.

I'm currently working on a first-generation diesel scheme, using an F unit decorated for the Baltimore & Ohio as a starting point, should about I'm repainting the model in a lighter shade of blue and adding lettering and powerplow from a Minnesota Pennsylvania RR diesel set.

When looking for a good starting point for a freelanced locomotive finish, I recommend researching the wide Walthers rich catalog to find popular locomotives in various paint schemes from a particular era, such as "F1" for first-generation diesels or "SD40" for second-generation diesels.

Those modeling first-generation diesels should also note that the Electro-Motive Division graphics department designed many railroad paint schemes. For example, schemes similar to the Denver & Rio Grande Western scheme shown on the Athearn Genesis F3 below were used by the Boston & Maine (gold and maroon), Lehigh Valley (black and Cornell Red), and Wabash (central gold and green). It would be easy to remove the factory-applied railroad name and replace it with that of a freelanced road.

The Union Pacific yellow and gray scheme could also make a good starting point. The scheme was fairly consistent over the decades and the UP used many different locomotive types, which would make for a varied maintenance fleet. If I

Conversion to a freelanced paint scheme could be as simple as removing this "Rio Grande" from the Athearn F3 shown above. The Electro-Motive Division graphics department designed several paint schemes that were similar to the Denver & Rio Grande Western scheme.

to research and add all the lines it's for during link plus the continental paddle on the long diesel.

Disassembling the model, including separating the cab from the hood, was also first step. See **Fig. 2** on page 49. This made masking the separate cab a much easier task.

I used 91 percent isopropyl alcohol to remove the lettering on the Kato model. I used cut cotton swabs to repeatedly scrub the large areas to lettering, while trying to avoid getting any alcohol on the blue paint. I was only partially successful. The dulled metal was thinned the lettering had not enough that I could avoid repainting the hood.

Luckily this model had few warning details on the long hood, so I didn't mind repainting it. After masking the yellow ends of the hood with Blue painter's tape, I airbrushed the cab of the paint with Accucoat 2 hours to dry.

On the locomotive cab, I used a razor to remove the blue lines to right hand handrail from the yellow area as well as the numbers on side. There was no need for any repainting.

The small secondary of the front for pantograph grabbed on the cab side couldn't be completely removed. I so brushed the brown cab panels with the use a brush it safely was CSX paint Bowler Yellow, 30 parts Yellow, 30 parts Testor No Red, 2 part Locomotive Electric color an application of Testor's Testor and even weathering use paint color difference wasn't noticeable.

Since my three models all had dash cab numbers, I replaced the cab numbers with those from a Microscale Sheet 87 decal set. To ease processes with the other models in my fleet, I also changed the position brands to black numbers on a white background, using Microscale decals shown in **Fig. 3** on page 49.

Atlas CSX GE Dash 8-40CW

My next locomotive was a pair of Atlas CSX Dash 8-40CWs. I was able to keep the details on the cab and along the sills intact as well as the short antenna masts and shell gluing proved the windshields. See **Fig. 4**.

Unfortunately any handrails were on the gray, blue, and yellow scheme, shown in **Fig. 5**. The common dark blue scheme would have required two repainting. In case I had to repaint the gray I saw the evening sunlight on the long hood.

I again removed the lettering and numbers with isopropyl alcohol. No additional to using cotton swabs. I had to carefully scrape away the 5 M

Fig. 4: Preserving details. All the detail on the front of the Dash 8-40CW is factory painted, including the road number, number boards, headlight assembly, MU cable, and step edging. Not having to repaint these details saved a lot of time.

Fig. 5: Atlas GE Dash 8-40CW. Rubbing alcohol is used to remove most of the lettering from the model's long hood (top photo). The equipment has gray body mounted phones prior to applying the Protocraft decals.

Fig. 6: Athearn GE AC4400CW. Each hood is removed from the frame assembly by gently prying the hood ends away from the frame. The hood is held in place by two screws and a tab at the front of the frame.

Small drill bits are used to remove the plastic from the holes for the grab irons. The grab irons are then installed from the inside of the hood.

Before painting the model, the hood is primed with Tamiya Fine White Primer (TS-26). Primer is used to help the paint adhere to the plastic and to provide a uniform color for the paint to cover.

The model is painted with Tamiya acrylic paints. The Southern Pacific gray is a mixture of XF-19 Sky Gray and XF-2 White. The red is XF-7 Red. The yellow is XF-3 Yellow. The black is XF-1 Black. The paint is applied with a Badger 200 airbrush.

Decals are from Protocraft. The decals are applied using Micro Sol and Micro Set. Micro Sol softens the decal and helps it conform to the shape of the model. Micro Set helps the decal adhere to the model.

Once the decals are dry, the model is sprayed with Testor's Dullcote to protect the paint and decals.

The model is reassembled by reversing the disassembly process. The grab irons are installed from the inside of the hood. The hood is then placed back on the frame and secured with the screws.

The model is then weathered using a combination of techniques. The wheels are weathered with a mixture of black and brown paint. The body is weathered with a wash of thinned black paint. The trucks are weathered with a dry brush of gray paint.

The model is then detailed with a variety of small parts, including antennas, horns, and grab irons. The antennas are made from wire, and the horns are made from brass tubing. The grab irons are made from wire and are installed from the inside of the hood.

The model is then ballasted with a mixture of sand and gravel. The ballast is glued in place with white glue. The model is then sprayed with a mixture of water and alcohol to help the ballast settle into the track.

The model is then weathered with a variety of techniques, including dry brushing, washes, and powders. The goal is to create a realistic appearance that is not too heavy or too light.

The model is then finished with a coat of matte varnish to protect the paint and decals. The model is then ready to be placed on the layout.

The Dash 8-40CW is a popular locomotive on many railroads, and it is a great model to add to any layout. The model is relatively easy to build and paint, and it can be detailed to a high level of realism.

The model is also relatively inexpensive, making it a good choice for modelers on a budget. The model is available from a variety of manufacturers, including Atlas, Athearn, and Intermountain.

The model is a great addition to any layout, and it is a model that will be enjoyed by modelers for many years to come.

READING

STORY AND PHOTOS BY NEAL A. SCHORR

Tribute to A HI-RAIL PIONEER

Herb Lindsay broke ground with realistic O gauge modeling

Don't miss the operating cupola shack included. The trains tend featured prototypically correct New York Central signals, above were added accurate Pennsylvania NK position-light devices.

This article's many tributes to Herb and his great O gauge layout was made possible by (left to right) Mitchell Thalmann, Jack Terrell, Eugene Lindsay, Steven Kohorn and Rick Dotson.

Just over three decades ago, Classic Toy Trains had a small article that forever changed our hobby. The article in the April 1989 issue told the story of Herb Lindsay and the O gauge layout he had designed and built with his wife, Eugene. The O x 36-foot railroad epitomized what railroads are "to rail". This article was most enthusiastic writer to witness the making of a six-decade real modeling while running three-rail trains.

Herb's talented simulated the concept of to rail in a new light. More importantly, it introduced O gauge modelers to this approach at the moment when three-rail trains were beginning their evolution from toy-like caricatures of real trains into true-to-scale replicas.

The coming Herb never ceased to be a life changing experience for me. By 1990, I had given most of the toy train trains of my youth and had switched to HO scale.

The article about Herb never inspired me to return to three-rail modeling, but it launch small as a never-to-be-forgotten vision of the layout to be taught. Fortunately for me, I was able to visit Herb many times, and become close acquaintance with his 3 railroads.

A Layout for the Layout

Herb's remembrance of his hobby had started during the adolescence in the early 1950s. His parents had moved to the C. I. from Canada and Herb and his father were now building a layout. "Dad received a for-sale-only train when Herb received Flagship in 1950. The couple later had to dismantle the railroad to accommodate family events."

All the years Herb spent his toy train trains and he began to plan a new trains and railroad in the 1970s. Once he and Eugene had settled in their residence, they commenced work on the O gauge layout that was eventually dismantled in 1991.

Both Herb and Eugene had only an suggestion. "The layout was built around

The N-ert layout Mark Lineburg designed and built with assistance and encouragement from his wife, Dagmar, is one of the most unique trains ever presented at Chevron City Trains. It has influenced numerous S gauge modelers, among them Brad Schorr, who visited many times.

the layout." Mark actually had specified that a 15-foot long fascia be used to support the first floor of the house in which one can observe that model dancers from the layout.

Interested in the Pennsylvania RR and the New York Central, Mark decided he needed more areas of control. Pennsylvania prefers both large size to close proximity and more drawn tracks. The design of the layout and its track plan were one of the early works.

Mark, whose first layout was just two feet on a tabletop, recognized that a shelf type layout would pose no problem to the track. Drawing on a 1964 Homeway plan originally published in Model Railroader, he developed an around the walls format with a center peninsula.

A double track New York Central mainline, offered for continuous running without the need for constant operator switching, route stops over the top of the benchwork. A single track Pennsylvania RR line ran parallel to, and down a road overlook/passing siding that augured the attributes of operations. Both lines crossed the peninsula, where their yards fronted and served the areas of Cleanfield, Dalbury and a yard to exhaust the operational opportunities to the extreme.

Operating the layout

Today's N-ert enthusiast has the advantages of benefiting systems of command control and operating scale sized, highly detailed equipment. None of these features were available to Mark when he assembled and ran his home layout. Trains had to be run by traditional block control blocks controlled via toggle switches. Although power was provided by Lionel Lionelle manufacturers, speed control was achieved through Variacore throttles, which were thermistor type devices.

A rotary elevation control with regard to motive power and rolling stock. In the 1970s and early '80s, top of the line equipment consisted of old Lionel Hudson, new Hi-Rev (the current standard) 4-6-4s, and ex. 9700 series Americans. Mark was attracted to Pennsy and New York Central locomotives, and cars for which Bob Hicks, recently by mail-order models and passed and decided there he has ever traveled and made. Several Williams engines also joined the fleet.

Early Marklin freight cars did not exist, so full-it scale Atlas shelf cases were done with Lionel trucks and sprung them to their new trains so they wouldn't wobble. Mark also had the understated Lionel replacements. Main passenger cars then, in Pullmans size, they Mark decorated for the

> *Mark Lineburg was a most pleasant gal to be most enabling. A good friend he is missed.* — Art Hopkins, a former editor of the N Gaugian and veteran layout owner

Engineer's main contribution to the layout was painting the backdrop. One of her best scenes showed the low-lying dark clouds of a thunderstorm over mountains in central Pennsylvania.

Many visitors consider this area the most beautiful section of the entire layout. Engineer's stunning backdrop doesn't only overwhelm the parallel New York Central and Pennsylvania RR lines.

Pennsylvania RR and Wabash with 3 and 4-rail. Most use two rivers.

Realistic environment and scenery

Well-painted and interesting was the rail road. Lionel's generally very like-real ground, oversized accessories. Instead, he preferred to build from scratch outdoors, scale-size structures, sometimes from plans printed in Model Railroader but more often drew his own designs.

One of Mark's projects led to his being featured in the model railroad press. He had hand a model of an eastern village (Lewis Evanston) in the January 1981 issue of MR and upheld photos of his completed masterpiece in the magazine. The small editors supported more pictures of the layout, and that culminated in the 1777 cover article in April of 1981.

Scenery also takes up the early month. There was an odd of grass mats on the horizon, mountains, pre-cut and run with. Like many scale enthusiasts of their era, Mark spent his bedtimes covered with Woodland plaster. "The remaining" is extra-city buildings painted at the time, doubled the realistic terrain. Mark added trees to made trees the size of Mardi Gras Woodland Meadow. He can work here and cannot overlook out of Oklahoma.

Chapter focuses involved in aspects of the layout's construction. We did many of the plantings and hanging fixtures and to Mark's weekend structures. But the part of the work that fulfilled to make structural modifications to it benefited.

Above all, Eugene felt his work to planning the "colorful" backdrop. "As part a an ending at the Eisenhowers across the created over Williamsport. The graduate effect was tricky. But on his stomach to complete the backdrop around the room section there.

Mark accidentally the esoteric layer rather than use a save key the commercial turn building. The Moore 0-6-0 steam switcher is moving to an industry down the tracks to pick up cars.

Lower gangway

As the lazy Susan first appeared in CTT, it was complete aside from the buildings and Williamsport. Although some of Lauterbach's structures were too small, the smaller two took just a few minutes. That inspired adding the town's main structures to enhance the congestion of the grade. We had to improvise as a result quite quickly after the cold and cracks. As shown in the February 1997 issue of CTT, Mark installed the trolley line with the assistance of Dagmar and several good friends, in particular Jack Yanak.

The next step was to complete the town of Crawford, including its signature structure, the Rocky Southern printing and school supply building. Mark and Dagmar traveled to the actual town in Pennsylvania to photograph the structure and receive guidance from the town's locals to ensure their model was accurate.

Finishing Williamsport called upon Mark to replicate the Pennsylvania RR's engine servicing facilities there. As we had in the January 1999 issue of CTT, Mark built and detailed a kitbash-downcast roundhouse and this modified to operating turntable to use Diamond Scale Models to mirror the roundhouse. The turntable deck mechanism was custom built for him by a fellow model railroader named Pete Bonanno.

The coal-ore unloading structure on the other bench is the three-track coal tipple just beyond the turntable. At 24 inches in height, the tipple towers above all the other structures on the bench and can smash the steamiest structure into ruin. The structure is entirely scratchbuilt, mainly of 1/8th inch-scale Plastruct shapes. Mark detailed it with stairways, coal chutes, and lighting. Some engineers use the A-shaped steel facing here and in conveyances of the coal tipplers, supporting the tower.

With Williamsport (finally completed) the layout appeared "loaded". Mark began to take advantage of all the more detailing areas in the hobby, some of all. Laurel's Transitioners (Centennial) cranes, for acquired cars farmers equipped with wood-controlled engines, notably, scale-sized scaled from Atlas H. Cranes and Modern. In addition, Mark has also an object at something much of the older western power fleet with TMC's.

> *"When my layout was featured in the March 2008 issue of CTT, I mentioned how much of an influence Model Layout was. My method on the hobby changed after I became familiar with the work."* — Dave Connolly, a railroad enthusiast in Glen Rock, Pennsylvania

Final touches

First, the details that followed the publication of the first article about the Lindsey's layout were because involved in replicating the farmer, metering trains, and constructing operating scenes with below-scale railroaders. The required wooden rail loading operations because they gave the model railroad purpose. The wooden shed previously added a signal control line. He used replicas of the Fowler's tower position light signals.

Mark's latest operating scenic was a modified Archi progress reduced by the

While railroad customers on this platform at Ann patiently await the arrival of their train, a Lionel New York Central 0-6-0 sits ready, waiting for its next call to action.

Finishing the locomotive servicing facility in Williamsport completed the layout. Mark used a kit from Yorkie Models kit for the roundhouse, making sure he put plenty of detail in the interior.

over the succeeding decades, since no one is truly accompanied for one ever. Period.

While said fellow present me in making one last trip to the Lockport Home in 2016 [sadly, that's had back and the home of an Rail crews to our railroad to help read the path-breaking] owner for gathering the information and showing the photographs for this article. Stephen and Jack Hewitt were ideal hosts, sharing everything they knew about the railroad.

As we can ensure each stopped the you every I realized seven lives over how Mark Lindsay's masterpiece was far ahead of its time. Even though the layout had been planned and started around 30 years before new rules. A skill landed no contemporaries.

Most of all, seeing the railroad once again reminded me of how Mark's work had inspired me to have my [illegible] railroad and inspired us to visit layout I worked how equally at work never switching three a scale layouts. For me, as for many others, Mark's influence has remained the one I got from my trains. For that, I owe Mark a debt of gratitude. I owe to those all a, all of us to the hobby do so well.

The golden years of gauge railroad in the Middle Division of the Pennsylvania RR has been profiled in Classic Toy Trains several times, inviting us to join the generations as they are involved with the preparation of this article. Stephen Hewitt, Jack Hewitt, Mitchell Hedderson, and his son and fellow steam-era railroaders. Steven Kline.

"I first saw Mark Lindsay's work in Classic Toy Trains. When a pal, collecting a few years later, showed me he had seen the substantial O gauge model railroad, I knew Mark's approach was the way to follow." — Bob Hennen, a well-known layout builder

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Using Static Grass

Article and photos by David J. Goodin, NMRA

I think it's easy to apply grass to natural-looking scenery, and impossible to do it in a way that looks artificial. Before we get any further, let me define what static grass is and how it is used. Static grass is a synthetic fiber that will hold a static charge. The fibers are cut to various lengths, which are approximately proportional to the sizes found in nature. The fibers, also known as static charge and applied over areas of surface that have been covered with a mixture of glue and water. A ground wire from the applicator gives a negative charge to the adhesive, and when the fibers come out of the applicator they receive a positive charge. Once in the glue mixture, they orient upright, in respect to the source of the positive charge, much like hair standing on end when rubbed with a balloon.

I first became aware of how realistic static grass is at a Prototype Modelers meet in Naperville, Illinois in October 2005. I then attended the Contact Bench Clinic in January 2006 and saw a demonstration. I was hooked and determined to take my layout with static grass. What I have learned is presented here. Special thanks goes to the two demonstrators, Bill Darnaby and Lance Mindheim, whose ideas I incorporated into my technique.

The concept of using static grass is not new. Model Railroader did an article on using it back in September 1980. However, the necessary grass mat took about seven hours to complete, a large investment of time and labor to use. Wizard used on his program in the 1990s to make lightning sparks. The concept was valid, but it would take 20 years until solid-state electronics produced the static charge in a small enough format.

Applying static grass is very simple. As I said, water and white glue are mixed together and brushed on the surface to be covered. I use about one drop of water and one drop of glue, but the exact ratio varies depending on the glue used and the texture — the water mix drops and moves on the surface. The reverse is necessary when the fibers are sprayed upright without falling over. I prefer white glue to Matte Medium, because glue will dry without the shine of the Matte Medium. You can "paint" grass on any surface on which the glue mixture will adhere. It is important to paint the surface with a color close to the grass color. For example, if you are using a color close to red, brown grass will not mask the color of pink foam or white plaster.

I use an inexpensive brush to paint the surface with a heavy coat of the glue mixture. I usually work in 8 to 10 inch (diameter) spots. The thicker mixture the glue is, the less you apply the grass. (If it does, simply brush on another coat of glue.) Concentrate the ground wire to a pin or small nail and place somewhere in the glue mixture. Fill

the instructions on the applicator about over-dried foil wherein grass blades and secure the cover back in place. Trim off the surplus and hold the instructions from 1-2 cm I think above the surface to be covered. Tip the container side on the grass foil-wet. Move the applicator across the area to be covered. Don't worry about getting a perfect uniform coat. The white glue mixed with the grass looks rather appalling, after everything is covered, spray the surface with non-genuine hairspray. Pumps work in the short moments to keep the spray from falling to the lawn. Go over the surface again with the applicator so that it is the glue and "grow" it longer. Remove the film which together and go longer. If there is an accident towards many grass, simply spray with more hairspray and go over the area again.

The can come over watering ground hope be simply covering it with the glue mixture. You can also plant grass between the individual bricks. Once in place, the fibers are very strong and will not come loose or break off. Just cover the side with cooking oil to keep the glue and hairspray from causing problems later. If you are not satisfied with an area, simply put more glue over the offending section and start over.

I would the last spring, as I use a brown, durable looking color for my first pass, specifically Mink #1861 Dark Purple Grass. Now there are not straight individual small clumps that tend to be less. Keep a bit over fingers to separate

you put a piece of mesh over the canvas, charcoal smudge textures into the lines (there's no use again).

Safety

Like any wood, oak reproduces in areas visible from outside. Chemicals put over-the-counter

Updating an Amtrak F40PH for the 1990s

Easy detail modifications bring a Walthers HO model into the next decade of passenger service

By Matt Swait • All photos by the author

Matt Swait detailed this Walthers HO model to represent an Amtrak F40PH locomotive that had been upgraded and repainted during its long career.

Front end modifications

I started with a Walthers decorated model of Amtrak's 404 in late 1996. Phase III paint scheme. I compared the F40PH model to my reference photos and the lack of dash lights was immediately apparent.

Dash lights are tiny miniature lights that are mounted above eye level above the cab's or engineer assistant's or engineer seats. They dash afterwards when the horn is sounded. Several ordered as inserts with dash lights in sample with a helical resistor that indicates a time. The lights were mounted on the front of the hood on every units, while an others and cabs installed as mounted another car near the front from numbers as shown on **fig. 1**. I decided to model the mounted version.

Modeling the mounts for the dash lights required cutting out large portions of the cab. I disassembled the model and used the saw-and-sand method of drilling out the rear corners of the cab, angle and connecting the holes I began by drawing the rectangles on the body shell to guide of and then drilling a couple holes in each corner. Then I placed a straight edge on the shell and scored many tentative cuts of the holes with a No. 11 blade applying the rectangle. Using the marks as guides, I methodically

Fig. 1 Ditch lights. The incandescent-type ditch lights are mounted on the nose of the Amtrak no. 505 unit that I have in Chicago on October 21, 2005.

Fig. 2 Cutting recesses. Matt cut rectangular holes into the corners of the nose and backed them with thin styrene to make the recessed openings for the ditch lights. On some units, the ditch lights were mounted on the front of the hood.

Historic background

As Amtrak took over North American passenger services in May 1971, the new carrier faced many challenges. One of its biggest problems was a fleet of high-mileage passenger locomotives that were no longer reliable enough for regular service.

General Motors Electro-Motive Division (EMD) developed the F59PHI to replace these aging veterans. Later production units, starting with no. 505, received larger fuel tanks for increased range and were known as Genesis Amtrak's primary passenger locomotive of the late 20th century. Based on the proven SD40 freight locomotive, the F59 design had a fully enclosed carbody, a 3,000-hp, 16-cylinder diesel engine, and was capable of speeds up to 103 mph. The new units included greater fuel capacity and additional head-end electrical power (HEP) capability to operate the new passenger cars.

In all, 210 F59PHIs were constructed for Amtrak between 1976 and 1988, and they operated nationwide outside of the electrified Northeast Corridor.

During their years of Amtrak service, most of the F59PHIs were rebuilt at least once. They also received multiple external modifications ranging from new paint schemes to safety mandates such as ditch lights and rerouted air hoses.

After traveling millions of miles for more than 30 years, the F59PHIs were retired by Amtrak. However some of these locomotives live on in Amtrak service as equipment rule control cars, power for commuter railroads, and in private ownership. A few have even been rebuilt by freight railroads for use on occasional special passenger movements and to haul excursion trains. ■

overall over each body and the corners are rounded.

A thin cardboard mask with a small square hole and a thick rectangle that I backed with a small square of thin black styrene was useful (above) with the brass. Then I connected a pair of bench transformers (to light windows) into the openings with momentary-contact switches (S1A–S1B, S2A–S2B, **Fig. 3**).

After installing all the parts, I found something confusing: ditch lights using 1156s (light-emitting diodes) I'd drilled through cab ditch-light casting and connected the 1156s into the couplings. It never did occurred to buying (yet) wiring ditch lights running 90 V. Problem no. 1! (See below in the sidebar).

Carbody detail additions

I carefully removed the warning horn on the I could add a Detail Associates version, plus some. I drilled out the 36 holes in the plate for the pre-horn that support the passenger horn and secured each one with a drop of CA.

Next, I drilled out the holes in the front and rear grilles for a run of Detail Associates wire. Again, I shredded the brass thread with the openings on the plate as a consultant's on my plan.

A pair of horizontal grab irons (both the headlight on the front of the nose. I carefully marked the outer locations of each grab iron and drilled a pair. We did so with it. I use my big alarm as a pair of Detail Associates pin vise). grab irons and slipped the long legs into the holes. I used the short legs to mark the locations and drilled the second hole for each grab iron as I could bend the installed and each body grab irons with straps at the opposite from the body. All of these details can be seen in **Fig. 4**.

We don't stop now to drill more holes to add the warning horn and horns, and more brass to the nose plate. See **Fig. 5** on the next page. Then I added four no. 2391 grab irons to make the cab access ladder on the left side. I also installed the single grab iron on the right of the diagonal. All of these locations are marked with tiny indentations on the body shell.

Finally, the plastic shows the cab has a series of five grab irons on each side

Fig. 2 Here details, minus the grab irons, m.u. hoses, and uncoupling lever have the Spartan model into a more realistic looking F59 locomotive.

Fig. 3 Detailed work. If you work carefully to preserve the original paint, the new detail parts can be easily brush-painted so that they blend right in.

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Fig. 3 Detailed work. If you work carefully to preserve the original paint, the new detail parts can be easily brush-painted so that they blend right in.

that provide access to the top of the cars. I snap the molded roof hatch number details off with a hobby knife and drilled out the hatch for the ladder grabs.

Then I followed the same method to install Detail Associates no. 2452 grab irons on each side of the roof. I painted these parts with Polly S Platinum Silver and Dark Blue as appropriate to match the colors used on the Walthers models as shown in **fig. 4**.

The model also needs the long roof-mounted grab irons on the cab and engine room hatches and rear runners. I made these from Detail Associates 4277 stainless steel wire. I drilled two .79" mounting holes, from a height of 4mm at a right angle, and inserted a wire into the hole. Working the wire with needle-nose pliers, I measured the length and made the second bend so it would reach the roof near the second hole. Then I secured the long grab irons with CA applied to the inside.

Mounted runners are provided for the short hoses, but the F59 right-hand centerpiece I installed Detail Associates 4277 wire rails to form a U-shaped for them.

Materials list

Walthers
SD70 (#8) w/sound, 4-axles
Proto 2k locomotive

ALMon
36" 90° fan

Detail Associates
4272 pilot lights
4276 m.u. hoses
4293 small grabs
4294 uncoupling levers
4298 rear bulbs
4315 stainless grab irons
4329 air compressor
4401 GP35 sand filler
4402 grab irons

Details West
219 Shunter antenna
222 Nathan M3 air horn

K&S Engineering
#88 brass wire 3/32" diameter

Rooftop fittings

The next logical part of a model is usually its roof, and the top of a locomotive presents many interesting details, including a cab air conditioner, grab irons on fairings, MU hoses, and a radio antenna.

Beginning with the top of the nose, I added Detail Associates no. 2294 headlight grab irons, placing two at the front of the nose, and on each side. Since some the shell was lacking wire holes, on a prototype locomotive, on both corners for two #360 wire rails.

As an option to replace the solid front to the cab, Details West cab horns on some locomotives from the cab roof to the center of the hood, just behind the exhaust stack. Since I had already planned to replace the original plastic horn with a brass casting, I removed the plastic horn in place and then mounted it off-body with the nozzle to the cab roof to hit the rail stanchion. Then I mounted an appropriate Details West fanfare A/I horn, behind the exhaust stack. See **fig. 5** on the opposite page.

The next major element I wanted to add was an air conditioner on top of the cab. Unfortunately, there's no casting available for the Amtrak-style air conditioner. But I was able to make one from a Detail Associates no. 2294 air conditioner and a 66.00 mm .66 in. style 90° bit.

I sanded the curved molded portion from the top of the air conditioner

Fig. 6 Room aplenty. Walt reused the Kwi-phone horns to key inside on the roof and added an air conditioner, lift rings, and a radio antenna.

Prototype research

I **always begin** any armature modeling project with some basic photographs, research on as many details I need to add. A number of high-quality Armtrak model and equipment photo galleries can be found on the Internet, including:

- Amtrak photo archives: katmans.railfanmap/
- Amtrak gallery: www.on-track.on.ma.com/amtrak-model.shtml
- Hidden Valley Railroad Photos: grand-n-fallenhalps.org/amtrak-gallery.html
- LocoPhotos: locophotos.com
- RailPictures.net
- Railroad Picture Archives: www.rrpicturearchives.net/Home.aspx?id=46074

In addition, I made a visit to the Worldwide & Grant. After receiving permission from the railroad, I was able to make a close inspection and take photos of theirs. Baldwin no. 200 Sonnet Amtrak Keystone no. 2001, 1975.

Mid-level is a pretty dirt modern choice for a version (Sound less, more Electro-Motive) was selected to Great Model Railroads (Web. Be sure to visit Dallas Model and website, also the Midland Cities

An amazing transformation

We had also now to brainstorm, pl of the arm detail parts to match the locomotive's colors using Polycil Pain over the GP tooling to be cast Dark Blue. This masking produced an an endless improvement to the appearance of the model and smooth away the maximum amount of time and work still scene the others.

In a few hours I had transformed an inexpensive locomotive that was spare-no-detail into a model more and was ready to paint the arrows along with two of my light-and bright-box reverses. From one on I'll be looking at each module as good starting points for future projects. **mrr**

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LETTING THE

Cat OUT OF THE BAG

An SD70ACe in yellow highlights EMD's role in the Caterpillar family

by Chris Guss and Jim Wrinn

1 Bolster's tech sheets the unit's basic information **2** Digital fuel gauge and shutoff **3** Inside the engine **4** Engineer control board includes brake handles, at left, digital display

Running with an Electro-Motive Diesel's Caterpillar-equipped model SW1 at Anniston, Ala., the 1,000-horsepower C15 debuts in the U.S. [redacted]

was first introduced in 1999. While the design change was most striking, with its angled hood, the reason for the change was to relieve crowding in the cab. Assistant engineer Bradley Byrd says the driver's position is [redacted] and was included with [redacted] in 2000.

CSXT also moved the dynamic brake to the rear of the long hood, making way for the new high-voltage locker behind the cab. To assist Tier 2 crewmembers, the hood was shaped more outward to the full width of the locomotive, adding [redacted] space to the [redacted] for additional [redacted].

Meanwhile, the hood houses the highly successful [redacted] engine, which was first introduced in 1999. Among [redacted] that [redacted] age, the engine has proved to be EMD's workhorse, adaptable to [redacted] emissions and other changes. The [redacted] also includes [redacted] output, two more turbocharged [redacted], and [redacted] of 268 hp, an increase of 100 hp from the [redacted].

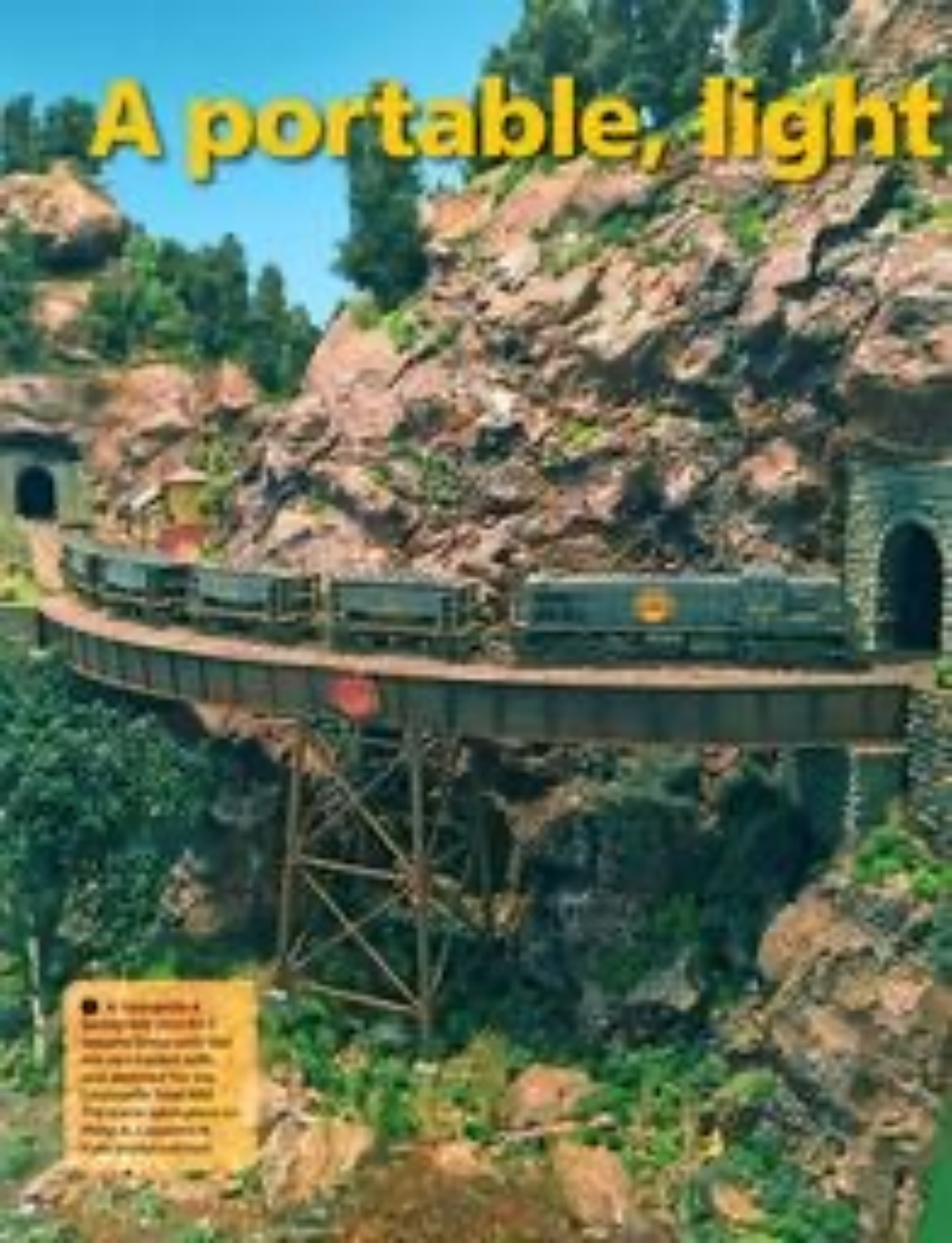
The [redacted] engine [redacted] the longest [redacted] service at [redacted] month. Auburn

[redacted] Manual transmission shown; [redacted] automated version. **[redacted]** Cushioning struts and hood overlap with [redacted] molded into the frame. **[redacted]** Twin headlights were [redacted] EMD emblem; and [redacted] indicates [redacted] the [redacted] model.

Looking like a Twin Tunnel GMD publicity image of 40 years ago, No. 1201, with three fellows of [illegible] and a caboose, stands out at the [illegible] in Peoria, Ill., on Oct. 31, 2012.

On the leading deck inside the Caterpillar plant in East Peoria, Ill., on Oct. 14, 2013, No. 1207 gains its nat filter and fuel separator temp halt.

A portable, light



weight layout

The N scale Georgette & Springfield is 24½ x 49 inches and weighs less than 35 pounds

By Philip A. Lawrence • Photos by Georgette & Lawrence

It's hard to believe more than 10 years have passed since my first N scale Georgette & Springfield layout appeared in the December 2008 issue of *Model Railroader*. A lot has happened in those three decades. I sold the layout for a good sale that kept the equipment, raised two children, built two small HO scale layouts, got into archery, woodshop, and trains, skimpy finishing, and retired as a senior vice president at General Motors. That's what remains 1/3 of the N scale Georgette & Springfield. It did.

My goals for the new layout were portability, ease of storage, and operational simplicity. The layout is now divided into two modules (24" x 49" and weighs less than 35 pounds. The layout consists also an 8'-tall collapsible portable table with 4' diameter geometric arch wheels. This allows me to adjust the layout size to any workbench to work on projects or view another landscape using only walls that are covered light blue but you might like it. I used the table for woodworking also. I can easily store the layout in a closet.

The initial concept (1) was an oval-shaped, 4-foot-by-8-foot railroad across two towns. Conveniently sized homes that are divided by a waterway ravine. Tunnels at diagonal corners allow the short trains to go out of sight for a few seconds before appearing in a new scene.

Behind the design

There's only so much track that can be squeezed into a 2 x 4 foot space. As most readers, I continuous operation.

Enter the 27" passing siding. This really improves, despite added track across the aisle. Push a train to it to pass and the locomotive runs back.

The passing siding at Lindbom (N) is 18" long. Which is seven trains longer than the next longest siding. Most of the rail activity centers on this side of the layout, so the longer siding makes it easier to work the industries.

Because of the layout's size, I used Peco's new 4-terminal handling turnouts throughout. Though the terminals are sharp, they can accommodate even the largest 4-6-6 Mallets since no locomotives.

There are no grades on the layout. I was able to adjust elevations changes by running the scenic track 1" wide (vs. 2" since concealed from mountains board. I glued the mountains board only (Liquid Nails for Projects, a foam safe adhesive) that doesn't dissolve the construction material.

With the track ready, I installed a curved backlit sponging a gauge to the corners of the layout (see photo on opposite page). Ed's Sky shadows from the water to the back is only 3". Overcast, the top of the highest mountains in the background is 24", providing a great deal of dimension change in a compact space.

Georgette. Hard to anything with activity, we go. Main #1 & heads, a coal train in the background, a train unit works the local industries. Phil weathers his structures with paints, powdered pastels, and washes.

Due to space limitations, the structures on this layout have a small footprint. The industrial structure are from Atlas, Vollmer, Kibri, and Model Power. Pat also scratchbuilt some of the layout's 23 structures.

In order to create a durable base, I made a deck from ½" and ¼" thick plywood. Which I secured with Liquid Nails for Projects. I also screwed the ply wood together. The combination of adhesive and screws formed a tight solid frame.

Reinforcing the Stone

The Covington & Springfield is set in the 1930s. To capture the look of stone that's been there for a long time, everything is weathered. The buildings are coated in grime, as industries coal smoke

Covington & Springfield no. 19, a 4-4-2 Pacific, pulls into town. Pat articulated the locomotive and passenger cars with Kadee parts and applied custom decals.

[illegible] shop this era. Other structures are [illegible] and look-ing [illegible] the effects of the elements – [illegible] and [illegible] [illegible].

Though the C&S is set in the 1930s, I took advantage of modern's license to run diesel locomotives from my personal [illegible]. Atlas Alco RS-3 and Rivarossi [illegible] [illegible] diesels [illegible] up on the line.

Being a modern railroad, the C&S [illegible] a mix of second-hand equipment. With the exception of an F7, all of the C&S locomotives have the railroad's name and herald.

The freight cars are primarily single-and double-sheathed boxcars. Most of the cars are Atlas cars like an Evans 4-door 5 [illegible] and 4-bay 4 cars with [illegible] trucks and Kadee metal couplers added.

The [illegible] cars are from [illegible] and add some added [illegible] cars [illegible] ing time. The diesel-[illegible] cars are equipped with Protocase Sounds, [illegible] cars complete, as the cars [illegible]

Georgette & Springfield

The layout at a glance

Access: Georgette & Springfield B-access
2.4
Acadia: 14.3 (km)
Size: 20.1" x 48"
Theme: Homestead
Location: southeastern Pennsylvania
Era: 1930s
Style: classic
Primary use: Main
Minimum radius: 7.1'
Minimum turnout: no. 4
Mainline grade: 4.0%
Benchwork: extended-base modular
Height: 5"
Roadbed: cork
Track: Peco Streamline
Scenery: Woodland Scenics ground cover, cast and hand-carved foam, and hydrocal
Backdrop: sand
Control: Model Railfan Easy Band-control power pack

Work. I added coal loads to three cars, as they're assigned to a small coal mine in Carpenville, Pa., an unmodeled area about 30 miles west of Acadia.

The 1:64 passenger-fare crowds of the Duncans and Dyer cars. The cars, shown at photo 9, are painted, weathered, and lettered with custom decals from Rail Kingdom.

Short trains on the route run the LCA1 Jeep to the layout's one coal mine, where it collects two coal hoppers and a caboose. Since the locomotive and freight car fleet greatly underutilizes each end locomotive storage capabilities, I run this "passenger-only" segment "mixed-train" to change out equipment.

Mountain scenery

A mountain range runs diagonally across the layout to create separation and distance. I made the basic mountains shape by cutting, gluing, stacking, and rough-carving pieces of extruded-foam insulation board. I cut and sized corrugated fiberboard strips to a craft-resistant size and wore personal protective equipment. (Ed.) I sanded the hills with wooden pieces of foam glued with Liquid Nails for Projects and rough-carved with a coarse sand file.

Next, I installed various rock castings. I used rubber and aluminum foil molds to make small plaster castings. I made the larger castings by injecting foam insulation into rubber molds.

The ground and horizontal topography is a mix of hydrocal and other paper-mache materials mixed with white glue and water into a paste and applied with a plastic knife. Rock moss, from Scenic Express and my hardwood, were glued in place as appropriate, especially for the talus.

I used filtered earth mixed latex paint as the base color for the scenery. With the paint still wet, I applied Woodland Scenics fine ground foam to contrast soil areas. To hold the scenery material in place, I applied a mix: warm mixture mixed with water and dish soap. One tsp. soap as a wetting agent.

While I was in scenery mode, I added small broken sticks, painted and washed and rice mosaic, and moss, and still enough white glue. I've additional moss. I added pinches of ground foliage and bush leaves.

After the ballasted and had dried, I brush painted the rock faces with flat earth colors including tan and brown umber, tan and black umber, and various shades of terra-c. I followed that with a thick ink and alcohol wash applied with a spray bottle.

I then dry-brushed the raised edges of the rock castings with light umber and white across the planes, making them darker to lighter, with a soft-bristled brush. I lightly whitened the brush on the edges of the raised surfaces, which helps the contrasting bolder stand out.

Bridging the lake

With the scenery finished, it was time to add the central road across it to. I removed the mass-able supporting the track where the tunnels is located and installed 1" foam sheets with and other plastic and polystyrene under them with 1" laminate spacers. I also used spacers to attach plastic girder bridge plates to the sides of the plywood sidewalkbed.

Then I glued a girder tunnel cut there on the road bed to the bottom of the tunnels. Plastic sheets painted to look like concrete were glued in place.

I surrounded the tunnels with Woodland Scenics Rock and Roll Rocks and mixed it in with many. The Cliff formed on the bridge is a complete scenery adhered as a piece of track underneath.

I made the lake before the tracks by covering a thin layer of plaster. Once the plaster dried I surrounded it with the black and earth mixed paints. I used light colors close to the shore and darkened to darker colors as the middle to suggest changes in depth. Then I glued wood straws, pebble fragments, and plastic materials to the lake.

I temporarily attached duct tape to the tracks to act as a dam. Then I poured Envirotex Clear two part resin over the lake. Once the resin dried, I installed some glass sections over the surface to create the illusion of texture.

Adding the grass

I started at Woodland Scenics Add-On the trees on any terrain. I sprayed the foliage with Krylon's Olive Drab and other flat, dark green paints.

After the paint was applied, I added Woodland Scenics Add-On to give the foliage a convergent appearance with realistic depth.

Most of the low growth plants were from a company or Engleish called

9 The train emerging from the tunnel at Nashville wasn't the one the passengers on the platform were hoping for. The station is a Model Power kit with the freight house and removed.

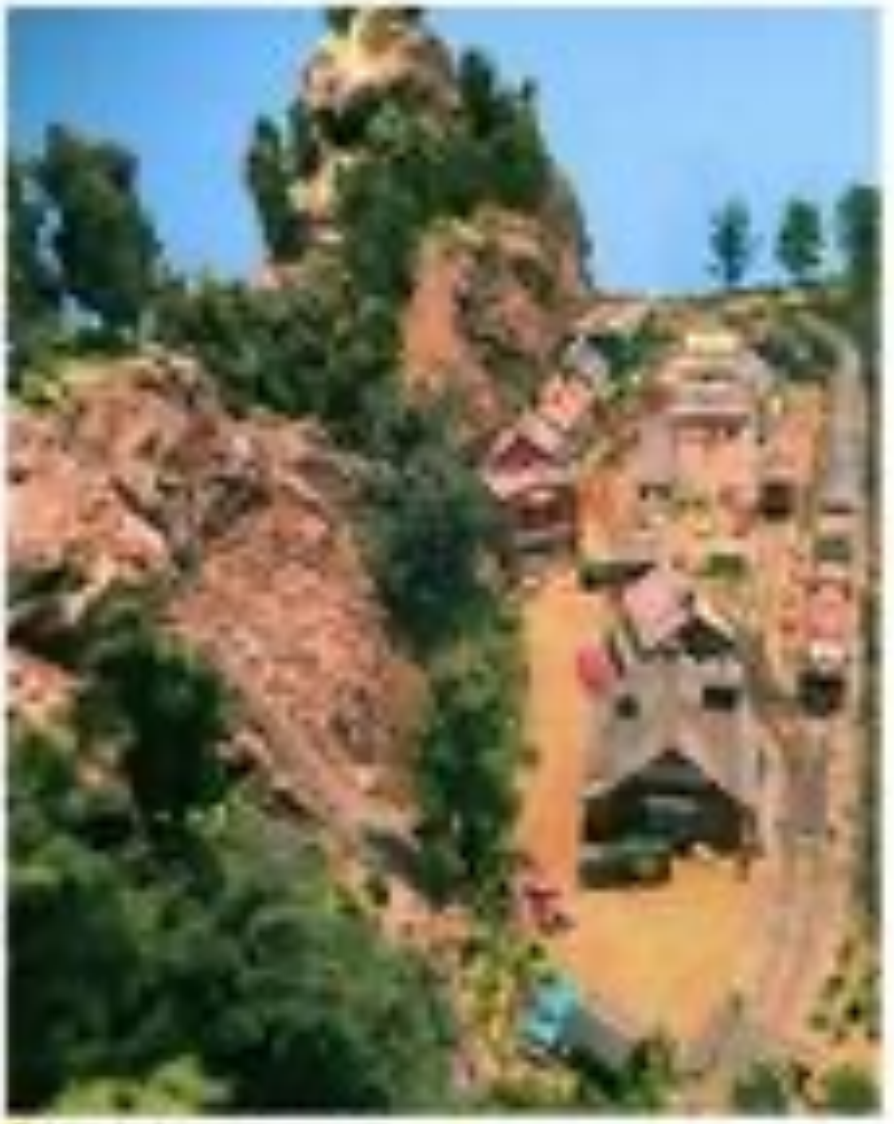
Section Plus trains sections plus curves. The three-effect scenery powders to cover any imagery notes, unless and brushes. The soft adhesive laminate works more fast and sure to install.

I rounded out the scenery with various colors of Woodland Scenics foliage, Clump Foliage, and field grass.

Structure showcase

There are 11 structures on the Covington & Springfield, all of which have small backgrounds. However, the buildings are large enough to create the impression of industry and purpose.

The structures are a mix of kitbuilt, scratchbuilt, and scratchbuilt. The latter



A crew-lined mountain range runs diagonally across the layout and serves as a view block between Andersville (shown) and Evelyn. Phil used rubber and aluminum foil molds to cast the rock outcroppings.

The area between the rock and power pack are 7 feet long and layout into a single cable. One line was hidden inside a conduit for layout.

Right for any occasion

There's always a trade-off in track plan complexity and operational capability. Your track layout was designed for 4- or 6-car trainsets. Is that right for a 2-plug and play mode or sound layout. If I were to install track and switch motor rails in just the first 7 feet of the layout, I could run a 2-car train. But the layout also provides opportunities to run passenger trains on switch local industries. We will run them. I run the layout. I know I'm going to have a good time.

Meet Philip A. Lawson

Philip Lawson, shown here with his daughter, Evangeline, lives in West Chester, Pa., with his wife, Georgette. The couple also has a grown son. After a 40-year career in commercial finance, Phil spent back to work for a national telecommunications company.

Intro to the Wiring for DCC website

A drag freight passes by "Bear Station Yellow" on Alan Garrison's old High & Mighty McCapacity. After a move to Tennessee, he's begun construction of a new model railroad

It is my pleasure to write for you here in Digital Command Control (DCC) about the wonders of model railroad locomotive control. My name is Allen Garrison, and I am a Product Architect for the DCC community.

For many of you, I may not need an introduction. My Wiring for DCC website (throughout this column, I'll refer to it as "the website") has been well received by modelers the world over since 1998. I'm excited for the chance I've always had on the website through this column. I look forward to sharing more for the hobby. Thanks to all who have written to me, either on the website and its comment and review forums.

I learned to write and model trains before I learned model railroad terms. How many things are misplaced? (Hint: misplaced or wrong terms are important too.) I went on to become an electrical and computer engineer. It was only a matter of time before computers existed to model model trains.

A friend had a layout that was stored in the attic and I had decided to go with an early command control system. There was a lot of trial and error. The switch throws were done frequently. That was really to avoid everything back. I gave everyone a cloth pull and credit the moment's thanks to read.

The problem wasn't the equipment or even the wiring. It was my attitude. I was trying to learn DCC and wiring at the same time. I was trying to learn DCC and wiring at the same time. I was trying to learn DCC and wiring at the same time.

In addition to the wiring web pages, I've also created a number of other pages. These pages are linked to the wiring pages and are designed to help you understand the wiring. The pages are linked to the wiring pages and are designed to help you understand the wiring.

Clicking on the link will take you to a page with more information about the wiring. The page will also have a link to the wiring page.

Clicking on the link will take you to a page with more information about the wiring.

The topics links are at the top of every page.

A sample from the Table of Contents menu shows the date a particular web page was updated.

Questions and answers are welcome. Please send them to allan@allangartner.com. I don't have all the answers, but I'll do my best to find them.

Q I'd like to scan the forms I receive from my bank and credit card companies and store them on my computer. Is there a way to do this without having to buy a scanner?

A Yes, there is. Most banks and credit card companies have a secure website that allows you to download your statements in a variety of formats. Check your bank's website for instructions.

Q I'm thinking of buying a new computer. Should I get a desktop or a laptop?

A Desktops are more powerful and less expensive than laptops, but laptops are more convenient. Which is more important to you?

Research & Test Car

Conducted by Charles A. Fayo, AMRM
Managers, Maintenance & Quality Assurance Department

[illegible]

[illegible] Modern Trinity TrinCoast 6-Door Boxcar: Will Buyers Be Interested?

Reviewed by Gary Hoover

This product did not receive a maintenance warrant

With [illegible] another new manufacturer, the consolidation of Brunswick and Tate Car, RC&M, Models from Fullerton, California. Founded in 2000 by Craig Morgan, an avid model railroader, RC&M's mission is to bring highly detailed rolling stock, from steam locomotives, cabooses, signals, decals, parts, and trucks. Products are offered in HO, N, and O scales. This month's review features RC&M's HO-scale Trinity TrinCoast 6-door boxcar in Tropicana colors. But first, let's take a closer look at the prototype history of this "ultra-loft" [illegible] boxcar.

Back in 1947, Italian immigrant Anthony Rossi founded Tropicana Products. The company [illegible] only 50 employees and delivered fresh orange juice to juice bars in nearby homes, similar to the way dairy products were delivered in those days. As the business grew and the market expanded outside Florida, Rossi [illegible] various methods to ensure [illegible]. By 1957, the ship S.S. Tropicana was leading Uncle Sam's [illegible] of juice to New York City each week. The famous "Golden" Aurora brand had a standing weekly order for 15,000 gallons of Tropicana while Lanza Incorporated [illegible] serving the early 1970s when over 600 cars were under contract, [illegible] gallons of juice from Florida to Kearny, New Jersey.

Table 1—Conformance and Inspection Summary

RC&M Trinity Auto Compartment Boxcar	
[illegible]	
[illegible]	Poor
[illegible]	Fair (1)
[illegible]	Poor
[illegible]	Fair
[illegible]	
[illegible]	Poor
[illegible]	Fair (2)
[illegible]	Poor (3)

NOTES:
1. [illegible]
2. [illegible]
3. [illegible]

In 2003, Trinity Rail introduced a unique 64-foot corrugated boxcar designed to maximize capacity and productivity while providing for easy loading and unloading. Each TrinCoast car has cargo [illegible] the prototypical four, 53-foot trucktrailers. Today, the "Juice Train" departs Florida [illegible] per week, arriving [illegible] the next day, weather [illegible] Ohio and the Pacific coast, [illegible] chilled all the way in 34 degree [illegible].

Once railroads and [illegible] the case, the [illegible] Trinity cars, including [illegible] Rail's [illegible] operating [illegible] and CTT Equipment Finance Corporation [illegible] operating stock. As [illegible] cars, they're not [illegible] railroads beyond the [illegible] to the [illegible] with [illegible] Kirby [illegible] Chemical, short [illegible] juice body [illegible] plastic [illegible] coatings.

[illegible]

Above: Underframe detail, with fuel tank and battery visible, plus brake and sanding gear. Note the "Tropicana" lettering on the tank. The model also features truck-mounted Kadee #5 scale couplers.

Above: View of the cab interior, which is the full depth of the body and includes the fireman's jump seat, which can be raised and lowered by a handle.

Below: Rear of the shell, with grab irons and lighting boards visible. Also visible are the brake rigging and the two weights.

and fold-out locations. Given the massive size of these cuts, only small detail differences (largely go unnoticed unless one is specifically comparing the cuts side by side.

BLMA describes its 1950 scale Tropicana reefer as a "stand-in." It's difficult at first to understand why such a finely detailed, full-featured model such as this would be called a "stand-in." The answer lies in those subtle detail differences mentioned above. For those that might need to have sharp eyes these differences are telling the truth. BLMA Tropicana reefers (or passenger Tropicana reefers would make) lower prices and wouldn't be that crowded. In any event, unless you're specifically after matching passenger gloves with the model, any additional dollars to cover these small differences. Conversely, the BLMA model appears to exactly match the UP and C&EI prototypes right down to the tail light colors (see inset photo).

BLMA offers 24 road numbers each for the Tropicana UP and C&EI prototypes. The C&EIC version is no longer listed on the BLMA website (www.blmamodels.com), but may still be available at hobby shops and on the Internet. The MSRP for the Tropicana reefer is $34.95. The Golden Spike scheme is due to be released in late 2014 with an MSRP of $39.95.

The BLMA reefers are ready to run right out of the box. They come equipped with 36-inch metal wheels riding on 100-mm fine-rolling metal-tipped Kadee No. 148 scale-sized Whisker couplers. These are the long-coupler-to-shank couplers, which match the look of the prototype and also provide the smallest radius operation on the layout.

The prototypically low-mid-height and the centermost details on the model are what really catch one's eye and make this piece of rolling stock stand. Even "dirt weathering marks" like Tropicana logos (except the Tropicana refrigeration unit, including ultrasonic pad housing, the platform and hand rails are left metal. Metal grab irons are separately applied with wire brake wheels. Inside the underframe there's plenty of detail, including brake cylinders, reservoirs, piping, and so on.

The body paint and trim of the lettering is thin and nicely applied. There is a considerable amount of very fine lettering, and it's all readable given sufficient magnification.

For the Controversial multisensitive crowd, all applicable NMRA standards passed except for the wheel width, which are slightly less than the standard minimum. The car weighed in at the correct weight of 6 ounces. Coupler height was also correct per the Kadee gauge.

Athearn EMD F59PHI Commuter Locomotive

by Kent Charles

[illegible]

[illegible]

The Model

[illegible]

Reissued Kato SD9043MAC brings a massive modern-era diesel to HO scale

It's an extremely detailed model of a General Electric Dash 9 that Kato originally released in 2014. It's back with new road numbers and paint schemes.

The prototype. During the 1980s both GMD and General Electric competed to be first to release a 4,000-hp alternating current (AC) traction locomotive. In 1987 GMD introduced the SD80MAC and the GE AC6000CW. It was the hare versus the tortoise. The 5,000-hp SD80MAC, the GE AC6000CW was designed as a 6,000-hp diesel engine. Unfortunately the engine wasn't ready and the SD80s received 4,300-hp 16-710G3 engines. Those four extra cylinders were given the unofficial designation of SD90/43MAC.

While GMD's SD90/43MAC's are on hand, the Union Pacific (UP) has the largest fleet of these locomotives. It's 955 hp engines were more powerful than the competition's 4,000-hp engines. The SD90/43MAC has a 16-cylinder 710G3C-T2 engine. Its 4,300 hp engine was the most powerful diesel engine available on the last GMD's, but more so the UP SD90s were so to run the most reliable 4,300 hp engine. The locomotives will serve duty throughout the UP system.

The model. The Kato SD90/43MAC shows some extra SD90/43MAC drawings as the right UP's Small Northwest. The power cab SD80 and SD90 have electrical hose disconnects. Small placement on the Kato model is also correct according to prototype SD90/43MAC photos. Also included the new-wave headlight and the new windows that run full on the long hood. (Ten SD90/43MAC had a diesel rear windows.)

Molded details on the model such as the engine access doors, are correctly placed. The air intakes and radiator grilles are well detailed.

There are several pieces of detail parts that have to be installed, including the handrails, as a, brass and cast plows. The handrails are wide profile and made of metal plastic to resist breaking. The instruction sheet shows the placement of the parts.

The model's lettering placement matches prototype photos. The small Union Pacific shield is also correctly placed under the dual hood headlights. There's also color separation between the red, yellow and gray cabs. I appreciate that the new numbers and feature font was molded in white, which is correct for the prototype. However, the edges of the gold keys should also be white. Iron this is gray on the model.

The mechanism. After removing the three rear rear couplers, I gently squeezed the sides of the body shell to disengage it's mating tabs along the frames. Then I lifted off the body shell.

The two motors and two flywheels sit on the center of a die cast metal frame. Drive shafts connect the motors to the 6-axle powered gearboxes.

The ground contact (PC) board is mounted on top of the motors. There's a light emitting diode (LED) for the headlight on each end. Clear plastic light pipes direct light to the back lighted on the front shell.

The right side DCC socket is mounted on top of the PC board. Seven socket plugs exist to command before, sounds, one of a decoder. And this writing, a plug-and-play sound decoder isn't available for this specific locomotive.

Performance. The 4-pin locomotive has an extremely smooth operation

The model has a die cast metal frame. Canadian Pacific version shown. An eight-pin DCC decoder socket is included on the printed circuit (PC) board.

Kato HO scale SD60/SD60I

Price: $150
Manufacturer:
Kato U.S.A. Inc.
100 Remington Rd.
Schaumburg, IL 60173
katousa.com
Road names (two road nos. each): Union Pacific, Canadian Pacific, Indiana Rail Road
Era: 1995 to present
Features:
- All-wheel drive and electrical pickup
- Blackened metal wheels in gauge
- Five-pole skew-wound motor with dual brass flywheel
- Right-pin (NEM) decoder socket
- Kato knuckle couplers at scale height
- Minimum radius: 18"
- Weight: 1 pound 8 ounces

HO scale EMD SD40-2

that runs quietly throughout its speed range. The model could climb a 4% test ambient at 1.5 mph and accelerated to a top speed of 80 mph. The prototype had a top speed of 71 mph.

I ran the SD60 for most through an 18" radius curve without any problems. However, the model hinder and operation on larger radius curves was especially when hauling a train. On an 24" radius curve the SD60 needed to uncouple from its train.

The locomotive has a line of pulling power so one can run on the prototype's short stacks. The SD60 also has a good job climbing hills. The Kato engine hauled a 12 car train up a 4 percent grade without stalling.

For readers are stand here, the release of the Kato SD60/SD60I is cost some stores. The only thing that would really to know would be a plug and play DCC sound decoder. Hopefully that's not too far away on the horizon. J.K.

B.T.S.

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Walthers HO scale Trinity two-bay covered hopper

A 3-rail/plus 39-foot, 4,750 cubic foot capacity two-bay covered hopper has been added to the Walthers collection. The HO scale model is based on a prototype design car used to haul fine sand, roofing granules, cement, and other dense materials.

Our sample is decorated as Canexus Corporation 39-foot, 4,750 cubic foot capacity two-bay covered hopper (CEX 4607) part of the leasing company's 4,727 through 4,850 series built under Greenbrier lot no. 11-1026 in November and December 2011. The full-size car has high-side rails, which make it easier to load the rotary car dumper and restrict grain. The Walthers model has been tested hard in comm. trains because they consistently indicate the car can be trusted with other built configurations.

The HO scale covered hopper has a one-piece plastic body. The roof is a cast resin casting with tabs that lock into corresponding notches on the car's interior. Ten body colors are available.

A two-piece plastic running board also built in supports molded on the roof. Fastens the top of the car. The running has recessed and are thoroughly separate from details, giving it a rich quality. The joints between running board sections are sturdy molded. The corners grab irons are molded.

The end sign are separate castings with molded-on ladder rungs. The crossover platforms are separate, but should have recessed bores into the running boards.

I compared the model to prototype drawings and data found on the Trinity's Rail website. The covered hopper accurately follows published dimensions. The paint on our sample was smooth and evenly applied. The printing was crisp, legible, and matched prototype photographs. The Canexus logo and the number were in focus on the left of the A Ends. CEX 4607 (small) as built was very close to prototype dimensions. I appreciated that the built date on the LIGHT panel was 11-11, correct for the car.

Most of the car's weight comes from a 1.1 ounce steel weight. The weight is held in place with three Phillips head screws. A few seconds the car is 3 ounces are

The Walthers car features separate end sills and brake appliances.

Facts & features

Price: $27.95
Manufacturer:
Walthers, Inc.
5601 W. Florist Ave.
Milwaukee, WI 53218
www.walthers.com
In or 2011 to present (as decorated)
Road names: Canexus (shown as Mark's Co., CEX, NdYMX Southern, Trinity Industries Leasing, Wells Fargo (WCFX) reporting marks, and more (NdYMX (Chicago, St. Paul, Minneapolis & Omaha) reporting marks, four road numbers per scheme
Features:
- 6 36" metal wheels mounted on plastic axles, correctly gauged
- Prototype-type metal couplers, installed at correct height
- Weight: 3.1 ounces (1 ounce less than light per National Model Railroad Association Recommended Practice 20-1)

If you stand by any body more than a handful of Trinity's other two-bay covered hopper. A total more of the Walthers collection (HO cars model train components on a large parallel railroad) but the short wheelbase cars will also serve small layouts well.

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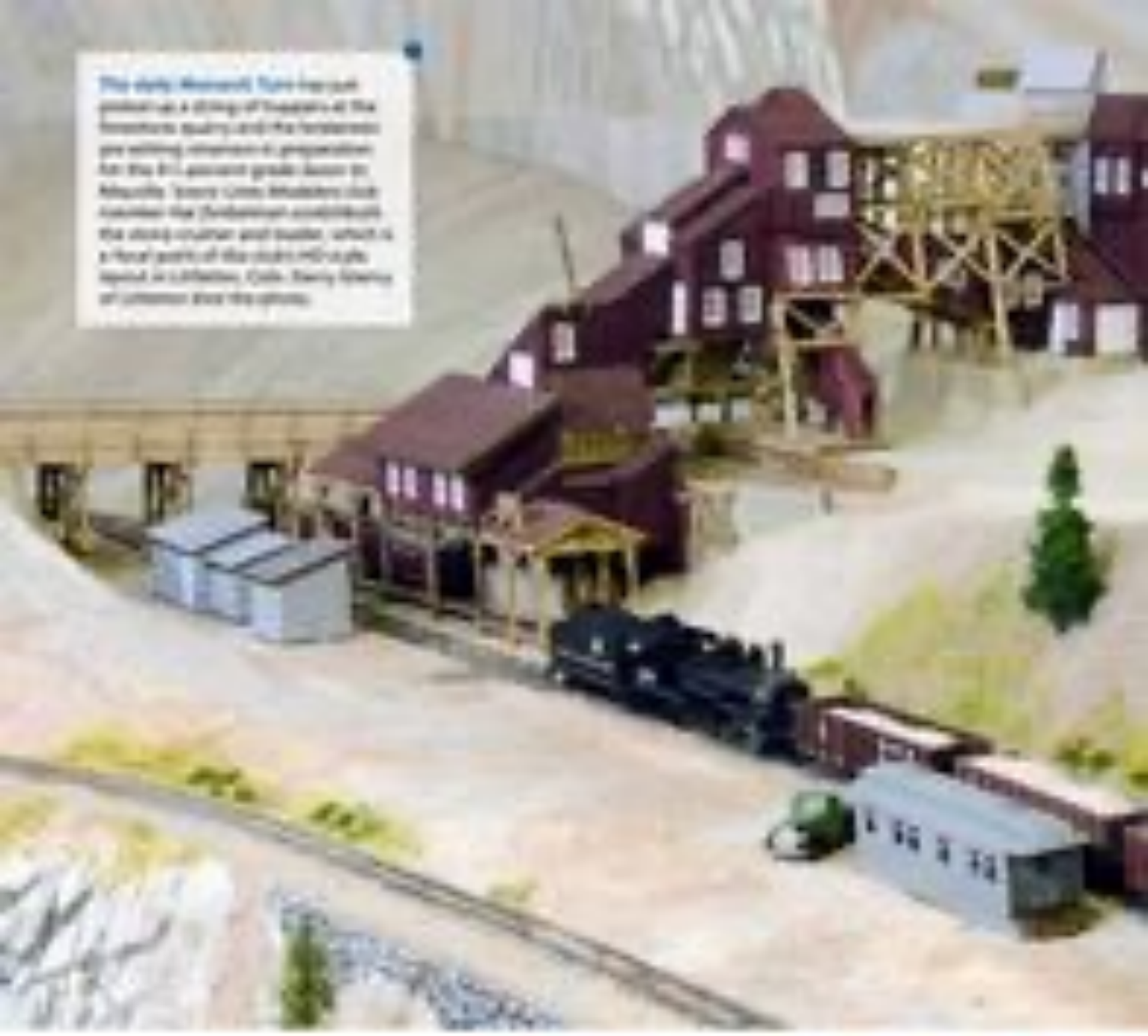
Ricky Inz, 14, passes the coal loader. Are the wheel-burning steamers next? Be prepared to fill up, Model Railroader contributing editor Lou Sassi shot this photo on the large-scale narrow gauge layout built up the Roselle-based Tumbaroo Central club. The layout was featured in the December 2012 MR.

Send us your photos

Trackside Photos is a showcase for the work of Model Railroader readers. Send your photos (digital images 3 megapixels or larger) to Model Railroader Trackside Photos, P.O. Box 1612, Waukesha, WI 53187-1612, or upload them to http://mrpics.kalmbach.com/. Submissions/permissions. For a copy of our photo guidelines, contact associate editor Steven Otte at sotte@kalmbach.com.



The daily Monarch Tyee Iron Ore passenger train pulls a string of hoppers at the limestone quarry and the fireman's pre-setting crossover in preparation for the 4% ascent grade down to Maquilla. Sierra Lines Modelers club member Hal Zimbelman scratchbuilt the stone crusher and loader, which is a focal point of the club's HO-scale layout in Littleton, Colo. Kerry Kravitz of Littleton shot the photo.

New York Central GP7 no. 5200 leads a morning run over the trestle on the way to Tupper Lake. John Hoehnen of Bellevue Hill, N.S.W., Australia, photographed the scene on his HO scale Tupper Lake & South Junction RR. John built the bridge from a Campbell kit and the station behind the consists from a Bar Mills kit.

A train rumbles overhead on the Brooklyn elevated subway, setting scintillas to the nearby buildings. David Gale of Hillsdale, N.J., photographed the scene on his O scale layout. The elevated structures are by Bridgelamp. David matched their color to a paint chip from an actual Brooklyn subway.

An L-4-4 of Canadian National's empty hopper from the coal trestle at evening within view Hudson engine terminal. The 4-2-2 on Lake piloted on the Hudson's 401 a Lake Baverpel 4-6 Hudson #8 belonging to Bob Hauser of Waterford. N.Y. Bob constructed the coal trestle and also did the photo.

The Last Word . . . By Jim Giblin

Trucks vs Trains: Myth vs Reality

Was it the highway system that devastated the railroads, or was it railroading's inability to keep pace?

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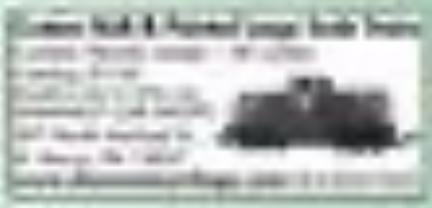

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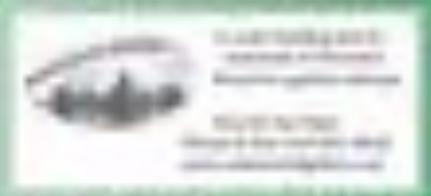

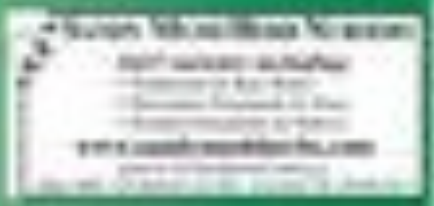

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HO Scale

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Norfolk Southern "C44-9W" with GE Keystone stripe — CMR #6595-1
CSX "C44AC" with cab/lo-vis step stripe — CMR #6596-1
BC Rail "C44-9W" — CMR #6597-1

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